United States Department of Agriculture

Forest Service

North Central Forest Experiment Station

Resource Bulletin **NC-73**

Timber Resource of Wisconsin's Northwest Survey Unit, 1983

W. Brad Smith

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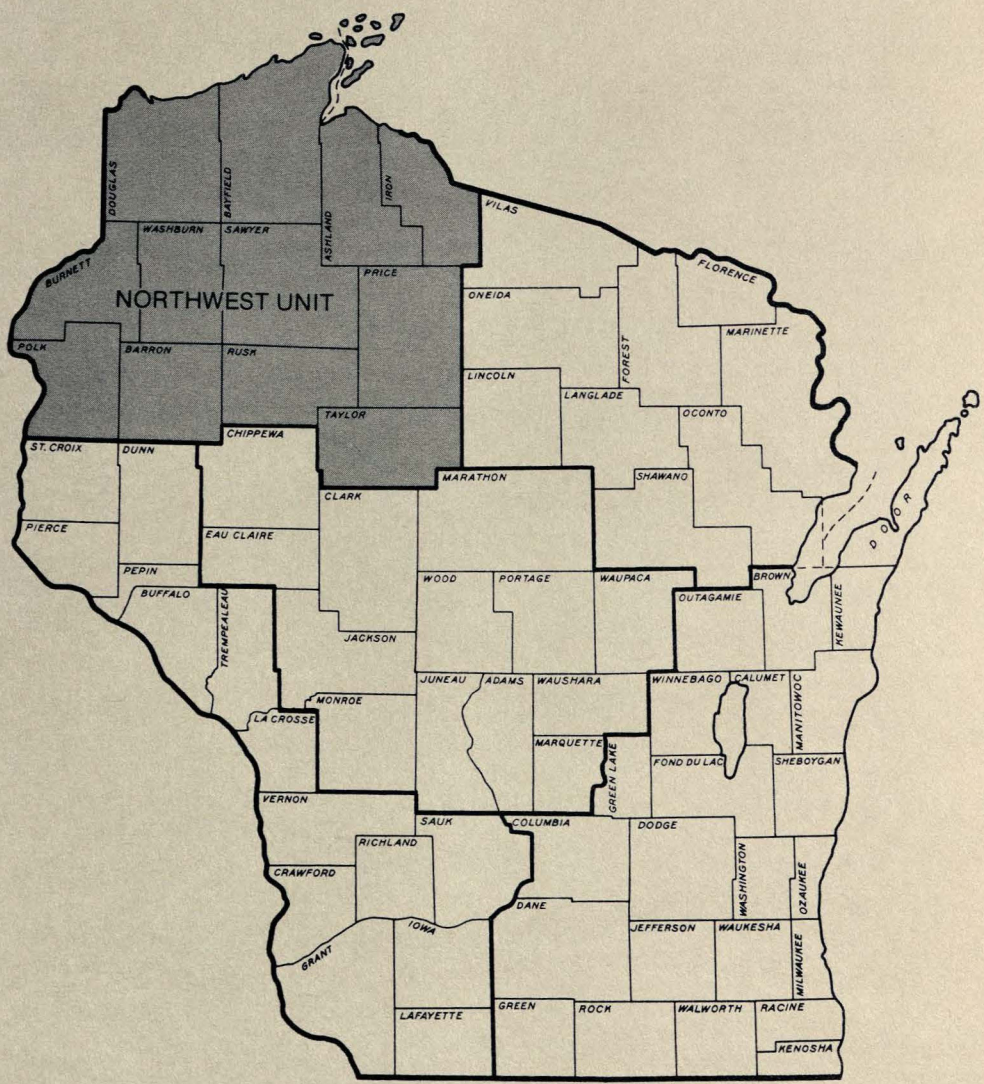

Information contained in this report includes the most commonly used Forest Inventory and Analysis statistics. However, additional forest resource data can be provided to interested users. Persons requesting additional information that can be provided from the raw inventory data are expected to pay for the retrieval costs. These costs will vary depending on the complexity of the request, from less than $100 for a relatively simple request to $2,000 for a complex retrieval involving services of a Forest Inventory and Analysis computer programmer. If requests for data conflict with ongoing Forest Inventory and Analysis work, they will be scheduled so as to minimize the impact on the work unit.

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Manuscript approved for publication December 16, 1983
June 1984

FOREWORD

Forest Inventory and Analysis (FIA) is a continuing endeavor as mandated by the Renewable Forest and Rangeland Resources Planning Act of 1974. Prior inventories were mandated by the McSweeney-McNary Forest Research Act of 1928. The objective of FIA is to periodically inventory the Nation's forest land to determine its extent, condition, and volume of timber, growth, and depletions. Up-to-date resource information is essential to frame intelligent forest policies and programs. USDA Forest Service regional experiment stations are responsible for conducting these inventories and publishing summary reports for individual States. The North Central Forest Experiment Station is responsible for forest resource evaluation in Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, eastern South Dakota, and Wisconsin.

Fieldwork for the Wisconsin Statewide forest inventory was begun in the summer of 1981 and completed in late 1983. Reports on the three previous Forest Service inventories of Wisconsin's timber resource are dated 1936, 1956, and 1968.

Similar Resource Bulletins reporting statistical highlights and detailed tables on the other Units in Wisconsin will soon be available. In addition to these statistical reports, a series of analytical reports will also be published.

More accurate survey information was obtained during the 1983 survey than otherwise would have been feasible because of intensified field sampling. Such sampling was made possible by additional funding and field personnel provided the North Central Station by the Wisconsin State Legislature through the Department of Natural Resources. Data from the Departments' canvass of all primary wood-using plants in the State was used to help estimate the quantity of timber products harvested in Wisconsin.

Aerial photos used in the Northwest Unit Forest Inventory were furnished by the Wisconsin Department of Natural Resources, the USDA Agricultural Stabilization and Conservation Service, and the Chequamegon National Forest.

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TIMBER RESOURCE OF WISCONSIN'S NORTHWEST SURVEY UNIT, 1983

W. Brad Smith, *Mensurationist*

HIGHLIGHTS

Forest Area

- Forest land accounted for 5.4 million acres (67 percent of the Unit's land area) in 1983, this constitutes no change since 1968.
- Commercial forest land occupied 5.1 million acres in 1983, and 5.2 million acres in 1968—a decline of less than 2 percent.
- Productive-reserved forest land totaled 114,600 acres in 1983, compared to 5,500 acres in 1968. Major additions since 1968 include the Apostle Islands National Lakeshore, St. Croix Wild and Scenic Riverway, Flambeau River Wilderness area, and the Rainbow Lake Wilderness area.
- Bayfield County contained the largest area of commercial forest in 1983 (740,500 acres) and in 1968 (777,300 acres).
- Farmers and miscellaneous private individuals continued to hold 2.3 million acres (45 percent of the commercial forest) in 1983. A new definition of farm ownership shifted much of what was previously farmer owned to the miscellaneous private category.
- County and municipal agencies owned 1.1 million acres of commercial forest in 1983 (21 percent).
- The aspen and maple-birch forest types continue to dominate the commercial forest land base in 1983 comprising 59 percent of the commercial forest area.
- Poletimber stands occupied 50 percent of the commercial forest in 1983 as compared to 54 percent in 1968.
- Sawtimber stands, which increased by 510,900 acres between surveys, amounted to 22 percent of the commercial forest in 1983, compared to 12 percent in 1968.
- Fifty-one percent of the commercial plantation area is in the red pine type (97,900) acres and 38 percent is in the jack pine type (72,500 acres).
- Nineteen percent of all commercial forest area has balsam fir as a prominent conifer in the understory.
- Less than 4 percent of all forest land is unproductive or reserved.
- Stands aged 80 years or more increased from 7 percent of the commercial forest area in 1968 to 10 percent in 1983.
- The average site index for commercial forest land in the Unit is 64 feet.

Timber Volume

- The volume of growing stock volume in 1983 was 5.3 billion cubic feet, 33 percent greater than the 3.9 billion in 1968.
- Sawtimber volume amounted to 10.1 billion board feet in 1983, 68 percent greater than the 1968 volume.
- The 4.0 billion cubic feet of hardwoods make up 75 percent of the growing-stock volume.
- White spruce growing-stock volume increased 363 percent since 1968 and red pine growing-stock volume increased 224 percent. Ingrowth of plantations to merchantable size was the dominant factor in these dramatic increases.
- The aspens (1.1 billion cubic feet), maples (1.0 billion), and oaks (0.5 billion) contain the highest volumes, and together account for nearly half of the growing-stock volume.
- Average growing-stock volume per acre in 1983 was 1,032 cubic feet, compared to 743 cubic feet in 1968.
- Forty-seven percent of the growing-stock volume is in stands aged 41 to 60 years.
- Nearly three-quarters of the sawtimber volume is in trees with grade 3 butt logs. Tree diameter is generally the limiting criteria.
- The volume in cull trees (rough, rotten, and short-log cull) is 648 million cubic feet; salvable dead tree volume is 280 million cubic feet.

Stand Conditions

- Net annual growth on growing-stock trees was 179 million cubic feet in 1982.

- The net annual growth rate of growing stock was 3.4 percent of inventory in 1982.
- Net growth averaged 33.7 cubic feet per acre in 1982.
- Annual mortality of growing stock amounted to 49 million cubic feet (0.9 percent of inventory) in 1982.
- Disease accounted for 18 percent of the mortality in 1982; chiefly diseases of aspen and elm.

Timber Use

- Timber removals from growing stock in 1981 totaled nearly 96 million cubic feet (1.8 percent of inventory), compared to 78 million cubic feet (1.9 percent of inventory) in 1967.
- The aspens made up 46 percent of the 1981 removals volume, although they account for only 22 percent of the growing-stock volume.
- Output of roundwood products totaled 110 million cubic feet in 1981; 62 percent was pulpwood, 17 percent was saw logs, and 17 percent was fuelwood.
- Wood residue from primary plants totaled 8.5 million cubic feet in 1981, 0.3 million of which were not used.

Biomass

- Highest yields of live tree biomass are in the white pine (85 green tons per acre) and the maple-birch (84 tons) forest types.
- Live tree biomass (trees greater than 1-inch in d.b.h.) totaled 332 million green tons (64 tons per acre) in 1983, nearly one half in the boles of growing-stock trees.

APPENDIX

ACCURACY OF SURVEY

Forest Inventory and Analysis information is based on a sampling procedure designed to provide reliable statistics at the State and Unit levels. Consequently, the reported figures are estimates only. A measure of reliability of these figures is given by sampling errors. These sampling errors mean that the chances are two out of three that if a 100-percent inventory had been taken, using the same methods, the results would have been within the limits indicated.

For example, the estimated growing-stock volume in the Northwest Unit in 1983, 5,311.4 million cubic feet, has a sampling error of ± 1.49 percent (± 79.1 million cubic feet). The growing-stock volume from a 100-percent inventory would be expected to fall between 5,232.3 and 5,390.5 million cubic feet (5,311.4 ± 79.1), there being a one in three chance that this is not the case.

Sampling errors were calculated separately for national forest land and other land because of the difference in the way the inventories were conducted. For example, the sampling error for growing-stock volume on land other than national forest is ± 1.56 percent but for Chequamegon National Forest land it is ± 4.39 percent. Different survey intensities resulted in different sampling errors.

The following tabulation shows the sampling errors for the 1983 Northwest Unit Forest Inventory:

Item	Unit totals	Sampling error
Growing stock	(Million cubic feet)	(Percent)
Volume	5,311.4	1.49
Growth	179.2	3.13
Removals	95.4	16.29
Sawtimber	(Million board feet)[1]	
Volume	10,057.4	2.44
Removals	249.6	19.95
Commercial forest land	(Thousand acres) 5,150.8	0.49

As survey data are broken down into sections smaller than Survey Unit totals, the sampling error increases. For example, the sampling error for growing-stock volume in a particular county is higher than that for total growing-stock volume in the Unit (table 66 shows the sampling errors for estimates smaller than Unit totals).

SURVEY PROCEDURES

We used a two-phase sampling design for the 1983 Wisconsin survey. This sampling scheme and associated estimators are similar to sampling with partial replacement (SPR) in that a set of randomly located plots was available for remeasurement and a set of new randomly located plots were established and measured. Major enhancements in the new Wisconsin design were stratification for disturbance on the old

[1] *International ¼-inch rule.*

sample and use of a growth model to improve regression estimates made on the old undisturbed forest plots. The growth model used was the Stand and Tree Evaluation and Modeling System (STEMS).[2]

The major steps in the new survey design were as follows:

1. The first phase of the design was aerial photo interpretation. In this phase two sets of random points were located on current aerial photographs. The first was a set of new photo points and the second was a set of relocated old photo points (ground plot locations from the previous inventory). A total of 42,566 1-acre points, including old ground sample locations, were systematically distributed across aerial photos of the entire Unit, except the Chequamegon National Forest. These points were classified into land classes as shown below to make a preliminary estimate of forest area. Next, a total of 30,121 of these points were stereoclassified as to stand-size class and density. Finally, a total of 3,973 points were examined on the ground to correct the preliminary area estimate for errors in classification and for actual changes in land use since the photos were taken.

	Photo points		Inventory plots
Land class	Classified	Stereoclassified	checked
Forest land	28,710	28,710	2,583
Unproductive/ reserved forest land	652	652	76
Nonforest land			
with trees	759	759	55
without trees	10,775	0	1,118
water	1,670	0	141
Total	42,566	30,121	3,973

2. The second phase of the design is a ground sample. The plot selection and measurement procedures of phase two of the new Wisconsin survey design are outlined in figure 1.

From the new photo points, a random sample of ground plots were established and measures of land use, volume, mortality and cutting were recorded. At each forest ground plot location, variable-radius plots (basal area factor 37.5) were established at 10 points

[2]*For more information on STEMS, see: Belcher, D. L.; Holdaway, M. R.; Brand, G. J. A description of STEMS: The stand and tree evaluation and modeling system. Gen. Tech. Rep. NC-79. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station; 1981. 18 p.*

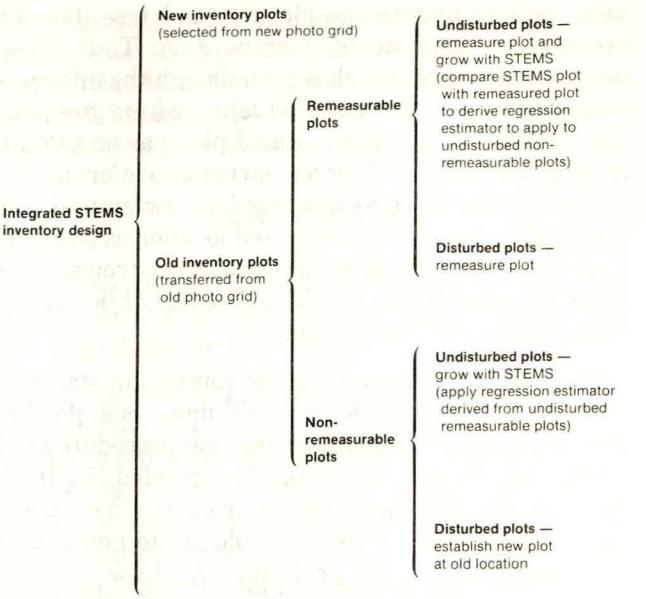
Integrated STEMS inventory design
New inventory plots (selected from new photo grid)
Old inventory plots (transferred from old photo grid)
Remeasurable plots
Non-remeasurable plots
Undisturbed plots — remeasure plot and grow with STEMS (compare STEMS plot with remeasured plot to derive regression estimator to apply to undisturbed non-remeasurable plots)
Disturbed plots — remeasure plot
Undisturbed plots — grow with STEMS (apply regression estimator derived from undisturbed remeasurable plots)
Disturbed plots — establish new plot at old location

Figure 1.—*Logic structure for the 1983 Wisconsin sample design.*

uniformly placed over the sample acre. These locations were monumented for future remeasurement.

On the old inventory photo points (old plot locations) we used a somewhat different procedure. Old plots were either remeasurable (monumented) or nonremeasurable (not monumented and thus difficult to relocate in the field). Within both of these groups, old plots were additionally identified as undisturbed or disturbed. The remeasurable old inventory photo points which are classified as forest undisturbed were remeasured on the ground to obtain measurements of current land use, volume, growth and removals. Additionally, all forest undisturbed remeasurable plots were projected to the current time using STEMS, to provide estimates of current volume and growth. The comparison of the projected and observed values on these plots provided regression estimators to adjust the projected values of the undisturbed nonremeasurable plots. All disturbed remeasurable plots were remeasured on the ground to assess changes since the last inventory. Disturbance as used here refers to any change on a plot that can be detected on aerial photos and which the STEMS growth processor cannot predict, such as; catastrophic mortality, cutting, seedling stands, and land use change.

The nonremeasurable forest points are those that were not monumented during the 1968 inventory but played a crucial role in the new survey design. The nonremeasurable undisturbed forest points were visited on the ground at the time of the last survey and following careful examination of both past and current photographs it was determined that nothing happened that STEMS was unable to simulate. STEMS was

then used to update the old plot and tree data to produce an estimate of current data. Thus these points became ground plots even though the information was obtained without actually visiting the plot. The plot record for each updated plot was sent to the field for verification of current ownership information. For points classified as disturbed, a new ground plot was established as close to the old location as possible. This allowed information about land use trends to be recorded even though the old plot could not be exactly relocated for remeasurement.

The estimation procedure for computing statistics from this sampling design was more complicated than the simple two-phase estimation procedure used in the past. In fact, this procedure yielded two independent samples, one coming from the new photo points and the other from the old photo points that were remeasured or projected. A more detailed description of the sampling design is available in a separate publication.[3]

3. Under an agreement with the Forest Service's Eastern Region 9, North Central crews remeasured 10-point variable radius plots on the Chequamegon National Forest at the same time they remeasured other plots in the Northwest Unit. The Chequamegon National Forest provided the Station with area of commercial forest land by forest type, stand-size class, and density for the forest. The Station then computed volume, growth, and mortality statistics. Area and volume tables for the forest were approved by the Chequamegon National Forest staff before publication.

4. Statistics on timber utilization during 1981 were obtained from mill surveys. The Wisconsin Department of Natural Resources canvassed resident sawmills, veneer mills, and other primary wood-using plants. The North Central Forest Experiment Station canvassed out-of-State sawmills, pulpmills, and veneer mills to determine their use of Wisconsin timber. Fuelwood and fence post output was based on a sample of public and private landowners to determine their production of fuelwood and fenceposts. Estimates of primary mill residue used for fuelwood were obtained from the canvass of Wisconsin primary wood-using plants. Timber cut for products by ownership class was determined by a canvass of public and industrial timber owners. The portion of timber cut unaccounted for by these owners was listed under "farmer and other owners".

[3]*For more information see: Hahn, J. T.; Hansen, M. H.; Fairweather, S. E. A sampling procedure incorporating a growth simulator. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station; 1984. (In prep.)*

5. A total of 2,568 felled trees on 133 active logging operations were measured throughout the State during 1981-1982 to develop wood utilization factors for converting timber products output to timber removals for saw logs and pulpwood. Factors for all other products were obtained during the 1966-1967 Wisconsin utilization study.

6. Field data were sent to St. Paul, Minnesota, for processing and analysis.

COMPARING WISCONSIN'S FOURTH INVENTORY WITH THE THIRD INVENTORY

Data from new forest inventories are often compared with data from earlier inventories to determine trends in forest resources. However, changes in procedures and definitions between surveys often make it necessary to adjust earlier survey data so that they are comparable to data from the new survey. A consistency check will be made for each forest unit in Wisconsin to ensure that the changes observed between inventories reflect actual changes in the resource and not changes in definitions or procedures.

Identifying and Correcting Procedural Changes

Some procedural changes were made between the 1968 and 1983 inventories of northwest Wisconsin in the method of deriving annual mortality estimates and determining forest type.

Mortality figures for the 1968 inventory were based on field estimates from nonremeasurement plots. Information gathered on remeasurement plots during the current inventory was used to adjust the 1968 mortality figures. This adjustment also changed the estimate of net growth for the 1968 inventory. Additionally, the old spruce-fir forest type was separated into two distinct types for the new inventory—white spruce and balsam fir. Comparisons with old data may be made by adding the two new types together.

Except for the net growth and mortality information, the old and new inventories of this region may be directly compared.

Checking for Consistency

A test was made to ensure that it was possible to move from the adjusted 1968 resource statistics to the 1983 values by means of Timber Resource Analysis System (TRAS), a USDA Forest Service computer program for updating, backdating, and projecting

timber volume, growth, mortality, and removals. Using the adjusted 1968 numbers of softwood and hardwood trees by 2-inch diameter class and applying 1983 cubic feet per tree estimates, volumes were generated for the 1968 inventory that are comparable with 1983 volumes. Then, using growth rates, mortality rates, and removals rates for the period between the two surveys, TRAS projected the inventory from 1968 to 1983. The program prints out volumes by diameter class for softwoods and hardwoods for selected years in the period. Thus, inconsistencies in volume, growth, mortality, and removals were identified and resolved.

TRAS generates an estimate of what total removals had to be in order for the inventory to have changed as it did between surveys, given the volume, growth, and mortality inputs. Estimates of removals for products and for logging residues, two of the three components of total timber removals, were available from an independent utilization study. An estimate of "other" removals (see Definition of Terms in Appendix), the third component of total removals, was made by subtracting the first two removals components from the TRAS-generated total removals estimate. This estimate of "other" removals was compared with findings from remeasurement plots and new plots (stump counts and land use change) to check its validity. When necessary, TRAS was rerun and adjusted until other removals were compatible with the estimate from field data. Total removals were "trend level removals" because the estimate of "other" removals was based on a removals trend line from 1968 to 1983.

LOG GRADE

In Wisconsin's Northwest Unit the butt log of every sawtimber tree on every full permanent sample plot was graded for quality.

Butt logs were graded on the basis of external characteristics as indicators of quality. Hardwood species were graded according to Hardwood Log Grades for Standard Lumber.[4] The best 12-foot section of the lowest 16-foot hardwood log, or the best 12-foot upper section if the butt log did not meet minimum log-grade standards, was graded as follows:

[4] *Vaughn, C. L.; Wollin, C. A.; McDonald, K. A.; Bulgrin, E. H. Hardwood log grades for standard lumber. Res. Pap. FPL-63. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory; 1966. 52 p.*

Forest Service standard grades for hardwood factory saw logs

Grading factors		Specifications							
		Log grade 1			Log grade 2				Log grade 3
Position in tree		Butts only	Butts and uppers		Butts and uppers				Butts and uppers
Scaling diameter, inches		13-15[1]	16-19	20+	11+[2]		12+		8+
Length without trim, feet			10+		10+	8-9	10-11	12+	8+
Required clear cuttings[3] of each of three best faces[4]	Min. length, feet	7	5	3	3	3	3	3	2
	Max. number	2	2	2	2	2	2	3	No Limit
	Min. proportion of log length required in clear cutting	5/6	5/6	5/6	2/3	3/4	2/3	2/3	1/2
Maximum sweep and crook allowance	For logs with less than one-fourth of end in sound defects		15 percent			30 percent			35 percent
	For logs with more than one-fourth of end in sound defects		15 percent			20 percent			35 percent
Maximum scaling deduction			40 percent[5]			50 percent[6]			50 percent

[1]Ash and basswood butts can be 12 inches if they otherwise meet requirements for small #1's.
[2]Ten-inch logs of all species can be #2 if they otherwise meet requirements for small #1's.
[3]A clear cutting is a portion of a face, extending the width of the face, that is free of defects.
[4]A face is one-fourth of the surface of the log as divided lengthwise.
[5]Otherwise #1 logs with 41-60 percent deductions can be #2.
[6]Otherwise #2 logs with 51-60 percent deductions can be #3.

Forest Service standard specifications for hardwood construction logs (tie and timber logs)[1]

Position in tree		Butt and upper
Min. diameter, small end		8 inches +
Min. length, without trim		8 feet
Clear cuttings		No requirements.
Sweep allowance, absolute		One-fourth of the diameter at the small end for each 8 feet of length.
Sound surface defects	Single knots	Any number, if no one knot has an average age diameter above the callus in excess of one-third of log diameter at point of occurrence.
	Whorled knots	Any number if sum of knot diameters above the callus does not exceed one-third of log diameters at point of occurrence.
	Holes	Any number provided none has a diameter over one-third of log diameter at point of occurrence, and none extends over 3 inches into included timber.[2]
Unsound surface defects		Same requirements as for sound defects if they extend into included time.[2] No limit if they do not.
End defects	Sound	No requirements.
	Unsound	None allowed; log must be sound internally, but will admit one shake not to exceed one-fourth of the scaling diameter will admit a longitudinal split not extending over 5 inches into the contained timber.

[1]These specifications are minimum for the class. If, from a group of logs, factory logs are selected first, thus leaving only nonfactory logs from which to select construction logs, then the quality range of the construction logs so selected is limited, and the class may be considered a grade. If selection for construction logs is given first priority, then it may be necessary to subdivide the class into grades.

[2]Included timber is always square, and dimension is judged from small end.

Softwood species were graded according to the following specifications:

Log Grades for Eastern White Pine

Log grade	Minimum size Diameter	Minimum size Length[1]	Sweep or crook allowance	Total cull allowance including sweep	Maximum weevil injury	Allowable knot size (inches)[2] on three best faces or minimum clearness of four faces
	Inches	*Feet*	*--------Percent--------*		*Number*	*Inches*
1	12 & 13	8-16	20	50	0	Four faces clear full length
	14+	10-16	20	50	0	Two faces clear full length, or four faces clear 50 percent length (6 feet min. length)[3]
2	6+	8-16	30	50	0	Sound knots l.e.[4] D/6 and less than 3 inches[5] Unsound knots: l.e. 1½ inches and for: butt, lots l.e. D/12 upper logs l.e. D/10 or four faces clear 50 percent of length
3	6+	8-16	40	50	8-foot logs 1 weevil 10-foot+ logs: 2 weevil	Sound knots l.e. D/3 and less than 5 inches. Unsound knots l.e.D/6 and less than 2½ inches.
4	6+	8-16	50	50	No limit	No limit

[1]Plus trim.
[2]Disregard all knots less than ½-inch diameter in all grades.
[3]The sum of the diameter of sound knots plus twice the sum of the diameter of unsound knots (in inches) is less than or equal to ½ of the diameter of the log (inches).
[4]l.e. means less than or equal to.
[5]D means d.i.b. of log at location of knot.

LOG GRADES FOR JACK PINE AND RED PINE

Grade 1: logs with three or four clear faces.[5]

Grade 2: logs with one or two clear faces.

Grade 3: logs with no clear faces.

After the tentative log grade is established, the log will be degraded one grade for each of the following, except that no log can be degraded below grade 3. Net scale after deduction for defect must be at least 50 percent of the gross contents of the log.

1. *Sweep.* Degrade any tentative 1 or 2 log one grade if sweep amounts to 3 or more inches and equals or exceeds one-third the diameter inside bark at small end.

2. *Heart rot.* Degrade any tentative 1 or 2 log grade if conk, massed hyphae, or other evidence of advance heart rot is found anywhere in it.

[5]*A face is one-fourth of the circumference in width extending full length of the log. Clear faces are those free of: knots measuring more than ½-inch in diameter, overgrown knots of any size, holes more than ¼-inch in diameter. Faces may be rotated to obtain the maximum number of clear ones.*

LOG GRADES FOR ALL OTHER SOFTWOOD LOGS

Grade 1

1. Logs must be 16 inches in diameter or larger, 10 feet or longer, and with deduction for defect not over 30 percent of gross scale.
2. Logs must be at least 75 percent clear on each of three faces.
3. All knots outside clear cutting must be sound and not over 2-½ inches in size.

Grade 2

1. Logs must be 12 inches in diameter or larger, 10 feet or longer, and with a net scale after deduction

for defect of at least 50 percent of the gross contents of the log.

2. Logs must be at least 50 percent clear on each of three faces or 75 percent clear on two faces.

Grade 3

1. Logs must be 6 inches in diameter or larger, 8 feet or longer, and with a net scale after deduction for defect of at least 50 percent of the gross contents of the log.

Note: (A) Diameters are diameter inside bark (d.i.b.) at small end of log.
(B) Percent clear refers to percent clear in one continuous section.

METRIC EQUIVALENTS OF UNITS USED IN THIS REPORT

1 acre = 4,046.86 square meters or 0.405 hectare.
1,000 acres = 405 hectares.
1 cubic foot = 0.0283 cubic meter.
1 foot = 30.48 centimeters or 0.3048 meter.
1 inch = 25.4 millimeters, 2.54 centimeters, or 0.0254 meter.
1 pound = 0.454 kilogram.
1 ton = 0.907 metric ton.

TREE SPECIES GROUPS IN WISCONSIN'S NORTHWEST UNIT[6]

SOFTWOODS
- Jack pine ..... *Pinus banksiana*
- Red pine ..... *Pinus resinosa*
- Eastern white pine ..... *Pinus strobus*
- White spruce ..... *Picea glauca*
- Black spruce ..... *Picea mariana*
- Balsam fir ..... *Abies balsamea*
- Eastern hemlock ..... *Tsuga canadensis*
- Tamarack ..... *Larix laricina*
- Northern white-cedar ..... *Thuja occidentalis*
- Other softwoods
  - Eastern redcedar ..... *Juniperus virginiana*
  - Norway spruce ..... *Picea abies*
  - Scotch pine ..... *Pinus sylvestris*

HARDWOODS
- White oaks
  - White oak ..... *Quercus alba*
  - Swamp white oak ..... *Quercus bicolor*
  - Bur oak ..... *Quercus macrocarpa*
  - Chinkapin Oak ..... *Quercus muehlenbergii*
- Select red oak
  - Northern red oak ..... *Quercus rubra*
- Other red oaks
  - Northern pin oak ..... *Quercus ellipsoidalis*
  - Black oak ..... *Quercus velutina*
- Select hickory
  - Shagbark hickory ..... *Carya ovata*
- Other hickory
  - Bitternut hickory ..... *Carya cordiformis*
- Yellow birch ..... *Betula alleghaniensis*
- Hard maple
  - Sugar maple ..... *Acer saccharum*
  - Black maple ..... *Acer nigrum*
- Soft maples
  - Red maple ..... *Acer rubrum*
  - Silver maple ..... *Acer saccharinum*
- Ashes
  - White ash ..... *Fraxinus americana*
  - Black ash ..... *Fraxinus nigra*
  - Green ash ..... *Fraxinus pennsylvanica*
- Balsam poplar ..... *Populus balsamifera*
- Eastern cottonwood ..... *Populus deltoides*
- Sycamore ..... *Platanus occidentalis*
- Aspens
  - Bigtooth aspen ..... *Populus grandidentata*
  - Quaking aspen ..... *Populus tremuloides*
- American basswood ..... *Tilia americana*
- Beech ..... *Fagus grandifolia*
- Black walnut ..... *Juglans nigra*
- Black cherry ..... *Prunus serotina*
- Butternut ..... *Juglans cinerea*
- Elms
  - American elm ..... *Ulmus americana*
  - Slippery elm ..... *Ulmus rubra*
  - Rock elm ..... *Ulmus thomasii*
- Hackberry ..... *Celtis occidentalis*
- Paper birch ..... *Betula papyrifera*
- Black willow ..... *Salix nigra*
- Other hardwoods
  - Boxelder ..... *Acer negundo*
  - Black locust ..... *Robinia pseudoacacia*
  - Honeylocust ..... *Gladitsia triacanthos*
  - River birch ..... *Betula nigra*
  - Red mulberry ..... *Morus rubra*
  - Blackgum ..... *Nyssa silvatica*
  - Northern Catalpa ..... *Catalpa speciosa*
- Noncommercial species
  - Mountain maple ..... *Acer spicatum*
  - Eastern hophornbeam ..... *Ostrya virginiana*
  - Peachleaf willow ..... *Salix amygdaloides*

[6]*The common and scientific names are based on: Little, Elbert L. Check list of native and naturalized trees of the United States. Agric. Handb. 541. Washington, DC: U.S. Department of Agriculture, Forest Service; 1979. 375 p.*

American hornbeam .... *Carpinus caroliniana*
Hawthorn ..... *Crataegus* spp.
Striped maple ..... *Acer pensylvanicum*
Mountain ash ..... *Sorbus* spp.
Pin cherry ..... *Prunus pensylvanica*
Chokecherry ..... *Prunus virginiana*

DEFINITION OF TERMS

Acceptable trees.—Growing-stock trees of commercial species that meet specified standards of size and quality but do not qualify as desirable trees.

Basal area.—The area in square feet of the cross section at breast height of a single tree. When the basal area of all trees in a stand are summed, the result is usually expressed as square feet of basal area per acre.

Biomass.—The above-ground volume of all live trees (including bark and foliage) reported in green tons. Biomass is made up of 5 components:

Growing-stock bole.—Biomass of a growing-stock tree from a 1-foot stump to a variable 4-inch top.

Growing-stock tops and limbs.—Biomass of a growing-stock tree from a 1-foot stump minus the growing-stock bole.

Cull bole.—Biomass of a cull tree from a 1-foot stump to a variable 4-inch top.

Cull tops and limbs.—Biomass of a cull tree from a 1-foot stump minus the cull bole.

1- to 5-inch trees.—Biomass of all live trees 1- to 5-inches in diameter at breast height.

Commercial forest land.—Forest land producing or capable of producingcrops of industrial wood and not withdrawn from timber utilization. (Note: Areas qualifying as commercial forest land are capable of producing more than 20 cubic feet per acre per year of annual growth under management. Currently inaccessible and inoperable areas are included, except when the areas involved are small and unlikely to become suitable for producing of industrial wood in the foreseeable future.) Also see definition of pastured commercial forest land.

Commercial species.—Tree species presently or prospectively suitable for industrial wood products. (Note: Excludes species of typically small size, poor form, or inferior quality such as hophornbeam and hawthorn.)

County and municipal land.—Land owned by counties and local public agencies or municipalities, or land leased to these governmental units for 50 years or more.

Cull.—Portions of a tree that are unusable for industrial wood products, because of rot, form, or other defect.

Desirable trees.—Growing-stock trees having no serious defects in quality limiting present or prospective use, having relatively high vigor, and containing no pathogens that may kill or seriously deteriorate them before rotation age. These trees would be favored by forest managers in silvicultural operations.

Diameter classes.—A classification of trees based on diameter outside bark, measured at breast height (4-½ feet above the ground). (Note: d.b.h. is the common abbreviation for diameter at breast height. Two-inch diameter classes are commonly used in Forest Survey, with the even inch the approximate midpoint for a class. For example, the 6-inch class includes trees 5.0 through 6.9 inches d.b.h.)

Farm.—Either a place operated as a unit of 10 or more acres from which the sale of agricultural products totals $50 or more annually, or a place operated as a unit of less than 10 acres from which the sale of agricultural products for a year amounts to at least $250. Places having less than the $50 or $250 minimum estimated sales in a given year are also counted as farms if they can normally be expected to produce goods in sufficient quantity to meet the requirements of the definition.

Farmer-owned land.—Land owned by farm operators. (Note: Excludes land leased by farm operators from nonfarm owners, such as railroad companies and States.)

Forest land.—Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currentlydeveloped for nonforestuse. (Note: Stocking is measured by comparison of basal area and/ornumber of trees, by age or size and spacing with specified standards.) The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, or other bodies of water or clearings in forest areas shall be classed as forest if less than 120 feet wide. Also see definitions for land area, commercial forest land, noncommercial forest land, productive-reserved forest land, stocking, unproductive forest land, and water.

Forest industry land.—Land owned by companies or individuals operating primary wood-using plants.

Forest trees.—Woody plants having a well-developed stem and usually more than 12 feet tall at maturity.

Forest type.—A classification of forest land based on the species forming a plurality of live tree stocking. Major forest types in the State are:

Jack pine.—Forests in which jack pine comprises a plurality of the stocking. (Common associates include eastern white pine, red pine, aspen, birch, and oak.)

Red pine.—Forests in which red pine comprises a plurality of the stocking. (Common associates include eastern white pine, jack pine, aspen, birch, and oak.)

White pine.—Forests in which eastern white pine comprises a plurality of the stocking. (Common associates include red pine, aspen, birch, and maple.)

Balsam fir.—Forests in which balsam fir and white spruce comprise a plurality of stocking with balsam fir the most common. (Common associates include white spruce, aspen, maple, birch, northern white-cedar, and spruce.)

White spruce.—Forests in which white spruce and balsam fir comprise a plurality of the stocking with white spruce the most common. (Common associates include balsam fir, aspen, maple, birch, and northern white-cedar.)

Black spruce.—Forests in which swamp conifers comprise a plurality of the stocking with black spruce the most common. (Common associates include tamarack, northern white-cedar, and balsam fir.)

Northern white-cedar.—Forests in which swamp conifers comprise a plurality of the stocking with northern white-cedar the most common. (Common associates include spruce and balsam fir.)

Tamarack.—Forests in which swamp conifers comprise a plurality of the stocking with tamarack the most common. (Common associates include black spruce, balsam fir, and aspen.)

Oak-hickory.—Forests in which northern red oak, white oak, bur oak, or hickories, singly or in combination, comprise a plurality of the stocking. (Common associates include jack pine, aspen, birch, and maple.)

Elm-ash-soft maple.—Forests in which lowland elm, ash, cottonwood, and red maple, singly or in combination, comprise a plurality of the stocking. (Common associates include aspen, birch, and balsam fir.)

Maple-birch.—Forests in which sugar maple, basswood, yellow birch, elm, and red maple, singly or in combination, comprise a plurality of the stocking. (Common associates include white pine, elm, hemlock, and basswood.)

Aspen.—Forests in which quaking aspen or bigtooth aspen, singly or in combination, comprise a plurality of the stocking. (Common associates include oak, pine, balsam fir, and paper birch.)

Paper birch.—Forests in which paper birch comprises a plurality of the stocking. (Common associates include maple, aspen, and balsam fir.)

Exotic.—Forests in which species not native to the State comprise a plurality of the stocking. (Mostly Scotch pine plantations.)

Gross area.—The entire area of land and water as determined by the Bureau of the Census, 1970.

Growing-stock trees.—Live trees of commercial species qualifying as desirable and acceptable trees. (Note: Excludes rough, rotten, and dead trees.)

Growing-stock volume.—Net volume in cubic feet of growing-stock trees 5.0 inches d.b.h. and over, from a 1-foot stump to a minimum 4.0 inch top diameter outside bark of the central stem or to the point where the central stem breaks into limbs. Cubic feet can be converted to standard cords by dividing by 79 cubic feet per solid wood cord. One standard cord is 128 cubic feet of stacked wood, including air and bark.

Hardwoods.—Dicotyledonous trees, usually broad-leaved and deciduous.

Idle farmland.—Includes former cropland, orchards, improved pastures, and farm sites not tended within the past 2 years and presently less than 16.7 percent stocked with trees.

Improved pasture.—Land currently improved for grazing by cultivating, seeding, irrigating, or clearing of trees or brush and less than 16.7 percent stocked with live trees.

Indian land.—Tribal land held in fee but administered by the Federal Government.

Land area.—A. *Bureau of the Census.* The area of dry land and land temporarily or partly covered by water such as marshes, swamps, and river flood plains (omitting tidal flats below mean high tide); streams, sloughs, estuaries, and canals less than one-eighth of a statute mile wide; and lakes, reservoirs, and ponds less than 40 acres in area.

B. *Forest Inventory and Analysis.* The same as the Bureau of the Census, except minimum width of streams, etc., is 120 feet and minimum size of lakes, etc., is 1 acre.

Live trees.—Growing-stock, rough, and rotten trees 1 inch d.b.h. and larger.

Log grades.—A classification of logs based on external characteristics as indicators of quality or value. (See Appendix for specific grading factors used.)

Logging residues.—The unused growing stock portions of trees cut or killed by logging.

Maintained road.—Any road, hard-topped or other surfaces, that is plowed or graded at least once a year. Includes rights-of-way that are cut or treated to limit herbaceous growth.

Marsh.—Nonforest land that characteristically supports low, generally herbaceous or shrubby vegetation and that is intermittently covered with water.

Merchantable.—Refers to a pulpwood or saw log section that meets pulpwood or saw log specifications, respectively.

Miscellaneous federal land.—Federal land other than National Forest, land administered by the Bureau of Land Management, and Indian land.

Miscellaneous private land.—Privately owned land other than forest-industry and farmer-owned land.

Mortality.—The volume of sound wood in growing-stock and sawtimber trees that die annually.

National Forest land.—Federal land that has been legally designated as National Forest or purchase units, and other land administered by the USDA Forest Service.

Net annual growth of growing-stock.—The annual change in volume of sound wood in live sawtimber and poletimber trees and the total volume of trees entering these classes through ingrowth, less volume losses resulting from natural causes.

Net annual growth of sawtimber.—The annual change in the volume of live sawtimber trees and the total volume of trees reaching sawtimber size, less volume losses resulting from natural causes.

Net volume.—Gross volume less deductions for rot, sweep, or other defect affecting use for timber products.

Noncommercial forest land.—(a) Unproductive forest land and (b) productive-reserved forest land.

Noncommercial species.—Tree species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial wood products.

Nonforest land.—Land that has never supported forests, and land formerly forested where use for timber management is precluded by development for other uses. (Note: Includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 1- to 40-acre areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 120 feet wide and more than 1 acre in area to qualify as nonforest land.)

a. *Nonforest land without trees.*—Nonforest land with no live trees present.

b. *Nonforest land with trees.*—Nonforest land with one or more trees per acre at least 5 inches d.b.h.

Nonstocked land.—Commercial forest land less than 16.7 percent stocked with growing-stock trees.

Other removals.—Growing-stock trees removed but not utilized for products, or trees left standing but "removed" from the commercial forest land classification by land use change. Examples are removals from cultural operations such as timber stand improvement work, land clearing, and changes in land use.

Ownership.—Property owned by one owner, regardless of the number of parcels in a specified area.

Ownership size class.—The amount of commercial forest land owned by one owner, regardless of the number of parcels.

Owner tenure.—The length of time a property has been held by the owner.

Physiographic class.—A measure of soil and water conditions that affect tree growth on a site. The physiographic classes are:

Xeric sites.—Very dry soils where excessive drainage seriously limits both growth and species occurrence. Example: sandy jack pine plains.

Xeromesic sites.—Moderately dry soils where excessive drainage limits growth and species occurrence to some extent. Example: dry oak ridge.

Mesic sites.—Deep, well-drained soils. Growth and species occurrence are limited only by climate.

Hydromesic sites.—Moderately wet soils where insufficient drainage or infrequent flooding limits growth and species occurrence to some extent. Example: better drained bottomland hardwood sites.

Hydric sites.—Very wet sites where excess water seriously limits both growth and species occurrence. Example: frequently flooded river bottoms and spruce bogs.

Plant byproducts.—Plant residues used for products such as mulch, pulp chips, and fuelwood.

Plant residues.—Wood and bark materials generated at manufacturing plants during production of other products.

Poletimber stands.—(See stand-size class.)

Poletimber trees.—Growing-stock trees of commercial species at least 5.0 inches d.b.h. but smaller than sawtimber size.

Productive-reserved forest land.—Forest land sufficiently productive to qualify as commercial forest land but withdrawn from timber utilization through statute, administration regulation, designation, or exclusive use for Christmas tree production, as indicated by annual shearing.

Productive-deferred.—Forest land sufficiently productive to qualify as commercial forest land but presently withdrawn from timber utilization because it is being considered for possible inclusion into the Wilderness system.

Rotten trees.—Live trees of commercial species that do not contain at least one 12-foot saw log or two saw logs 8 feet or longer, now or prospectively, and/or do not meet regional specifications for freedom from defect primarily because of rot; that is, when more than 50 percent of extra cull volume in a tree is rotten.

Rough trees.—(a) Live trees of commercial species that do not contain at least one merchantable 12-foot saw log or two saw logs 8 feet or longer, now or prospectively, and/or do not meet regional specifications for freedom from defect primarily because of roughness or poor form, and (b) all live trees of noncommercial species.

Roundwood products.—Logs, bolts, or other round sections (including chips from roundwood) cut from trees for industrial or consumer uses. (Note: Includes saw logs, veneer logs and bolts; cooperage logs and bolts; pulpwood; fuelwood; piling; poles; posts; hewn ties; mine timbers; and various other round, split, or hewn products.)

Salvable dead trees.—Standing or down dead trees considered merchantable by regional standards.

Saplings.—Live trees 1.0 to 5.0 inches d.b.h.

Sapling-seedling stands.—(See stand-size class.)

Saw log.—A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight and with a minimum diameter outside bark (d.o.b.) for softwoods of 7 inches (9 inches for hardwoods) or other combinations of size and defect specified by regional standards.

Saw log portion.—That part of the bole of sawtimber trees between the stump and the saw log top.

Saw log top.—The point on the bole of sawtimber trees above which a saw log cannot be produced. The minimum saw log top is 7.0 inches d.o.b. for softwoods and 9.0 inches d.o.b. for hardwoods.

Sawtimber stands.—(See stand-size class.)

Sawtimber trees.—Growing-stock trees of commercial species containing at least a 12-foot saw log or two noncontiguous saw logs 8 feet or longer, and meeting regional specifications for freedom from defect. Softwoods must be at least 9.0 inches d.b.h. Hardwoods must be at least 11.0 inches d.b.h.

Sawtimber volume.—Net volume of the saw log portion of live sawtimber in board feet, International ¼-inch rule, from stump to a minimum 7 inches top diameter outside bark (d.o.b.) for softwoods and a minimum 9 inches top d.o.b. for hardwoods.

Seedlings.—Live trees less than 1.0 inch d.b.h. that are expected to survive. Only softwood seedlings more than 6 inches tall and hardwood seedlings more than 1 foot tall are counted.

Short-log (rough tree).—Sawtimber-size trees of commercial species that contain at least one merchantable 8- to 11-foot saw log but not a 12-foot saw log or two noncontiguious saw logs 8- to 11- feet long.

Shrub biomass.—The total above-ground weight (including the bark) of selected shrubs and trees less than 1 inch d.b.h.

Site class.—A classification of forest land in terms of inherent capacity to grow crops of industrial wood based on fully stocked natural stands.

Site index.—An expression of forest site quality based on the height of a free-growing dominant or codominant tree of a representative species in the forest type at age 50.

Softwoods.—Coniferous trees, usually evergreen, having needles or scale-like leaves.

Stand.—A growth of trees on a minimum of 1 acre of forest land that is stocked by forest trees of any size.

Stand-age class.—Age of the main stand. Main stand refers to trees of the dominant forest type and stand-size class.

Stand-area class.—The extent of a continuous forested area of the same forest type, stand-size class, and stand-density class.

Stand-size class.—A classification of forest land based on the size class of growing-stock trees on the area; that is, sawtimber, poletimber, or seedlings and saplings.

a. *Sawtimber stands.*—Stands at least 16.7 percent stocked with growing-stock trees, with half or more of total stocking in sawtimber or poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

b. *Poletimber stands.*—Stands at least 16.7 percent stocked with growing-stock trees of which half or more of this stocking is in poletimber and/or sawtimber trees, and with poletimber stocking exceeding that of sawtimber.

c. *Sapling-seedling stands.*—Stands at least 16.7 percent stocked with growing-stock trees of which more than half of the stocking is saplings and/or seedlings.

d. *Nonstocked stands.*—Stands in which stocking of growing-stock trees is less than 16.7 percent.

State land.—Land either owned by States or leased to them for 50 years or more.

Stocking.—The degree of occupancy of land by trees, measured by basal area and/or the number of trees in a stand by size or age and spacing, compared to the basal area and/or number of trees required to fully utilize the growth potential of the land; that is, the stocking standard.

A stocking percent of 100 indicates full utilization of the site and is equivalent to 80 square feet of basal area per acre in trees 5 inches d.b.h. and larger. In a stand of trees less than 5 inches d.b.h., a stocking percent of 100 would indicate that the present number of trees is sufficient to produce 80 square feet of basal area per acre when the trees reach 5 inches d.b.h.

Stands are grouped into the following stocking classes:

Overstocked stands.—Stands in which stocking of trees is 134.0 percent or more.

Fully stocked stands.—Stands in which stocking of trees is from 101.0 to 133.9 percent.

Medium stocked stands.—Stands in which stocking of trees is from 61.0 to 100.9 percent.

Poorly stocked stands.—Stands in which stocking of trees is from 16.7 to 60.9 percent.

Nonstocked areas.—Commercial forest land on which stocking of trees is less than 16.7 percent.

Timber removals from growing stock.—The volume of sound wood in growing-stock trees removed annually for forest products (including roundwood products and logging residues) and for other removals.

Timber removals from sawtimber.—The net board-foot volume of live sawtimber trees removed for forest products annually (including roundwood products and logging residues) and for other removals.

Timber products output.—All timber products cut from roundwood and byproducts of wood manufacturing plants. Roundwood products include logs, bolts, or other round sections cut from growing-stock trees, cull trees, salvable dead trees, trees on nonforest land, noncommercial species, sapling-size trees, and limbwood. Byproducts from primary manufacturing plants include slabs, edging, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and screenings of pulpmills that are used as pulpwood chips or other products.

Tree biomass.—The total aboveground weight (including the bark) of all trees from 1 to 5 inches in d.b.h., and the total aboveground weight (including the bark) from a 1-foot stump for trees more than 5 inches in diameter.

Tree size class.—A classification of trees based on diameter at breast height, including sawtimber trees, poletimber trees, saplings, and seedlings.

Unproductive forest land.—Forest land incapable of producing 20 cubic feet per acre of annual growth or of yielding crops of industrial wood under natural conditions because of adverse site conditions. (Note: Adverse conditions include shallow soil, dry climate, poor drainage, high elevation, steepness, and rockiness).

Upper stem portion.—That part of the bole of sawtimber trees above the saw log top to a minimum top diameter of 4.0 inches outside bark or to the point where the central stem breaks into limbs.

Urban and other areas.—Areas within the legal boundaries of cities and towns; suburban areas developed for residential, industrial, or recreational purposes; schoolyards, cemeteries, roads; railroads; airports; beaches; powerlines; and other rights-of-way; or other nonforest land not included in any other specified land use class.

Water—(a) *Bureau of the Census.*—Permanent inland water surfaces, such as lakes, reservoirs, and ponds having at least 40 acres in area; and streams, sloughs, estuaries, and canals at least one-eighth of a statute mile wide.

(b) *Noncensus.*—Permanent inland water surfaces, such as lakes, reservoirs, and ponds from 1-39.9 acres in area; and streams, sloughs estuaries, and canals from 120 feet to one-eighth of a statute mile wide.

Wooded pasture.—Improved pasture with more than 16.7 percent stocking in live trees but less than 25 percent stocking in growing-stock trees. Area is currently improved for grazing or there is other evidence of grazing.

Wooded strip.—An acre or more of natural continuous forest land that would otherwise meet survey standards for commercial forest land except that it is less than 120 feet wide.

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Table 1.--Area of land by land class, Northwest Unit, Wisconsin, 1968 and 1983

(In thousand acres)

Land class	1968	1983
Forest land		
Commercial forest land		
Jack pine	319.4	247.8
Red pine	91.8	132.6
White pine	45.7	36.5
Balsam fir	260.4	219.6
White spruce	38.1	31.9
Black spruce	94.8	111.2
Northern white-cedar	74.0	107.8
Tamarack	101.5	111.5
Oak-hickory	443.5	415.6
Elm-ash-soft maple	419.7	414.9
Maple-birch	1,380.5	1,478.7
Aspen	1,604.4	1,508.3
Paper birch	240.3	268.8
Nonstocked	132.3	65.6
Subtotal	5,246.4	5,150.8
Noncommercial forest land		
Unproductive	178.9	165.8
Productive-reserved	5.5	114.6
Subtotal	184.4	280.4
Total	5,430.8	5,431.2
Nonforest land		
Cropland	1,043.0	1,275.2
Pasture and range	243.2	345.4
Other	1,220.5	876.5
Total	2,506.7	2,497.1
Total land	7,937.5	7,928.3
Water (Bureau of the Census)	282.0[1/]	291.0[2/]
Total land and water	8,219.5[1/]	8,219.3[2/]

[1/] U.S. Department of Commerce, Bureau of Census, 1960.

[2/] U.S. Department of Commerce, Bureau of Census, 1980.

Table 2.--Area of land by land use class and county, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Land use class	All counties	County					
		Ashland	Barron	Bayfield	Burnett	Douglas	Iron
Forest land							
Commercial forest	5,150.8	503.8	158.7	740.5	317.1	627.9	377.9
Unproductive forest	165.8	26.6	7.0	14.3	1.9	9.6	17.3
Productive reserved	114.6	38.7	--	25.3	16.9	2.8	4.9
Total	5,431.2	569.1	165.7	780.1	335.9	640.3	400.1
Nonforest land							
Nonforest with trees							
Cropland with trees	12.6	--	4.7	--	--	1.9	--
Improved pasture with trees	60.1	--	17.6	2.1	--	3.9	4.3
Wooded strips	8.1	4.0	-	--	--	--	--
Idle farmland with trees	16.0	4.0	2.3	--	--	--	4.2
Marsh with trees	90.6	4.0	9.2	10.7	3.8	16.9	3.6
Urban and other windbreaks	56.9	2.1	12.8	5.6	3.5	4.5	--
Windbreaks	10.6	--	2.3	--	--	--	--
Wooded pasture	30.3	2.0	4.6	1.8	1.9	--	--
Subtotal	285.2	16.1	53.5	20.2	9.2	27.2	12.1
Nonforest without trees							
Cropland without trees	1,262.6	45.8	260.8	68.4	97.1	69.3	25.4
Improved pasture without trees	255.0	20.1	25.2	15.8	3.7	18.6	30.1
Idle farm without trees	14.6	2.1	--	4.0	--	--	--
Marsh without trees	374.2	12.5	10.6	11.5	64.0	42.0	--
Other farm-farmstead	23.2	--	--	1.9	--	--	--
Urban and other	269.2	7.3	36.3	32.9	12.0	37.2	13.9
Noncensus water	13.1	1.9	3.4	2.0	--	1.9	--
Subtotal	2,211.9	89.7	336.3	136.5	176.8	169.0	69.4
Total	2,497.1	105.8	389.8	156.7	186.0	196.2	81.5
Total land	7,928.3	674.9	555.5	936.8	521.9	836.5	481.6
Water (Bureau of the Census)[1/]	291.0	1.7	13.6	32.1	41.6	23.8	33.2
Total land and water[1/]	8,219.3	676.6	569.1	968.9	563.5	860.3	514.8

(Table 2 continued on next page)

[1/] U.S. Department of Commerce, Bureau of Census, 1980.

(Table 2 continued)

Land use class	County					
	Polk	Price	Rusk	Sawyer	Taylor	Washburn
Forest land						
Commercial forest	220.8	550.8	363.1	607.7	354.4	328.1
Unproductive forest	3.8	41.3	6.0	21.0	13.6	3.4
Productive reserved	5.4	6.3	4.1	10.2	--	--
Total	230.0	598.4	373.2	638.9	368.0	331.5
Nonforest land						
Nonforest with trees						
Cropland with trees	2.0	--	--	--	4.0	--
Improved pasture with trees	3.2	7.8	4.3	--	9.6	7.3
Wooded strips	--	--	--	--	--	4.1
Idle farmland with trees	1.8	--	2.0	--	--	1.7
Marsh with trees	7.3	13.2	--	3.5	9.2	9.2
Urban and other windbreaks	5.5	2.9	--	9.2	--	10.8
Windbreaks	--	--	--	8.3	--	--
Wooded pasture	13.0	--	1.9	--	1.7	3.4
Subtotal	32.8	23.9	8.2	21.0	24.5	36.5
Nonforest without trees						
Cropland without trees	266.3	88.5	101.7	41.5	120.8	77.0
Improved pasture without trees	17.5	14.7	21.5	12.4	57.8	17.6
Idle farm without trees	1.8	--	--	--	--	6.7
Marsh without trees	18.1	57.4	49.0	50.5	22.1	36.5
Other farm-farmstead	3.6	2.1	5.2	4.2	1.8	4.4
Urban and other	15.4	20.4	25.3	31.3	26.2	11.0
Noncensus water	1.8	--	--	2.1	--	--
Subtotal	324.5	183.1	202.7	142.0	228.7	153.2
Total	357.3	207.0	210.9	163.0	253.2	189.7
Total land	587.3	805.4	584.1	801.9	621.2	521.2
Water (Bureau of the Census)[1/]	25.6	14.5	11.1	60.7	7.6	25.5
Total land and water[1/]	612.9	819.9	595.2	862.6	628.8	546.7

[1/] U.S. Department of Commerce, Bureau of Census, 1980.

Table 3.--Area of commercial forest land by ownership class and county, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All counties	County					
		Ashland	Barron	Bayfield	Burnett	Douglas	Iron
National Forest	693.5	143.3	--	238.7	--	--	--
Miscellaneous federal	7.3	--	--	--	5.6	--	--
State	176.8	10.0	6.9	8.8	26.5	32.4	19.2
County and municipal	1,109.8	40.6	16.1	160.6	100.2	253.8	141.7
Indian	94.6	38.5	--	7.2	--	--	10.5
Forest industry	529.2	42.3	--	89.2	7.6	99.4	80.7
Farmer	450.2	26.5	55.2	41.3	45.3	30.5	10.5
Misc. private-corporation	224.0	46.7	6.9	17.8	5.6	28.5	24.5
Misc. private-individual	1,865.4	155.9	73.6	176.9	126.3	183.3	90.8
All owners	5,150.8	503.8	158.7	740.5	317.1	627.9	377.9

(Table 3 continued)

(Table 3 continued)

Ownership class	County					
	Polk	Price	Rusk	Sawyer	Taylor	Washburn
National Forest	--	105.2	--	99.0	107.3	--
Miscellaneous federal	--	--	--	1.7	--	--
State	5.7	17.9	6.0	33.0	5.3	5.1
County and municipal	24.4	64.4	79.6	100.5	8.9	119.0
Indian	--	--	--	38.4	--	--
Forest industry	--	39.3	51.6	98.2	9.0	11.9
Farmer	66.7	15.9	83.0	7.0	39.4	28.9
Misc. private-corporation	14.7	21.5	3.9	28.2	3.6	22.1
Misc. private-individual	109.3	286.6	139.0	201.7	180.9	141.1
All owners	220.8	550.8	363.1	607.7	354.4	328.1

Table 4.--Area of commercial forest land by ownership class and site class, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All classes	Site class (cubic feet of growth per acre per year)					
		225+	165-224	120-164	85-119	50-84	20-49
National Forest	693.5	--	--	17.9	211.9	335.3	128.4
Miscellaneous federal	7.3	--	--	-	3.5	-	3.8
State	176.8	--	--	5.6	43.6	63.1	64.5
County and municipal	1,109.8	--	--	20.9	227.0	502.3	359.6
Indian	94.6	--	--	3.7	29.5	52.4	9.0
Forest industry	529.2	--	--	3.6	91.8	199.6	234.2
Farmer	450.2	--	--	20.9	118.5	209.1	101.7
Misc. private-corporation	224.0	--	--	5.6	52.9	93.2	72.3
Misc. private-individual	1,865.4	--	--	42.8	430.4	832.8	559.4
All owners	5,150.8	--	--	121.0	1,209.1	2,287.8	1,532.9

Table 5.--Area of commercial forest land by ownership class and stand-volume class, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All classes	Stand-volume class (board feet[1/])		
		Less than 1,500	1,500 to 5,000	5,000+
National Forest	693.5	287.6	320.4	85.5
Miscellaneous federal	7.3	5.4	1.9	--
State	176.8	85.3	76.0	15.5
County and municipal	1,109.8	545.2	451.9	112.7
Indian	94.6	28.8	33.3	32.5
Forest industry	529.2	285.5	189.0	54.7
Farmer	450.2	234.0	170.2	46.0
Misc. private-corporation	224.0	94.5	90.3	39.2
Misc. private-individual	1,865.4	951.2	713.8	200.4
All owners	5,150.8	2,517.5	2,046.8	586.5

[1/] International 1/4-inch rule.

Table 6.--Area of privately owned commercial forest land by ownership class, owner tenure, and size of holding, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Ownership class and owner tenure class	All sizes	Size of holding (acres)								
		1-4	5-10	11-20	21-50	51-100	101-500	501-2,500	2,501-5,000	5001+
Forest industry										
1-4 years	37.0	--	--	--	--	3.5	1.9	--	1.8	29.8
5-9 years	60.8	--	--	--	--	--	2.0	--	-	58.8
10-19 years	187.0	--	--	--	--	--	2.0	7.5	7.1	170.4
20+ years	244.4	--	--	--	--	--	--	1.9	5.3	237.2
All classes	529.2	--	--	--	--	3.5	5.9	9.4	14.2	496.2
Farmer										
1-4 years	89.4	--	5.9	11.7	23.6	19.2	25.6	3.4	--	--
5-9 years	82.6	--	5.6	7.4	16.2	17.0	30.6	5.8	--	--
10-19 years	149.4	--	7.6	7.6	37.1	31.7	63.5	1.9	--	--
20+ years	128.8	3.7	11.6	13.6	23.8	31.8	44.3	--	--	--
All classes	450.2	3.7	30.7	40.3	100.7	99.7	164.0	11.1	--	--
Misc. priv.-corporation										
1-4 years	47.4	--	--	--	1.8	5.9	13.5	1.7	1.8	22.7
5-9 years	25.1	--	--	--	1.8	1.8	7.1	5.3	1.7	7.4
10-19 years	48.2	--	--	--	5.7	7.6	13.0	9.3	3.4	9.2
20+ years	103.3	--	--	--	5.5	8.0	25.0	25.5	17.7	21.6
All classes	224.0	--	--	--	14.8	23.3	58.6	41.8	24.6	60.9
Misc. priv.-individual										
1-4 years	544.4	9.4	15.8	24.9	181.3	153.8	153.6	3.8	1.8	--
5-9 years	409.2	11.2	12.8	22.0	140.1	101.9	115.8	5.4	--	--
10-19 years	502.1	8.6	9.5	18.9	151.1	113.0	179.5	21.5	--	--
20+ years	409.7	3.9	5.7	15.3	110.3	111.0	140.0	23.5	--	--
All classes	1,865.4	33.1	43.8	81.1	582.8	479.7	588.9	54.2	1.8	--
All private owners										
1-4 years	718.2	9.4	21.7	36.6	206.7	182.4	194.6	8.9	5.4	52.5
5-9 years	577.7	11.2	18.4	29.4	158.1	120.7	155.5	16.5	1.7	66.2
10-19 years	886.7	8.6	17.1	26.5	193.9	152.3	258.0	40.2	10.5	179.6
20+ years	886.2	7.6	17.3	28.9	139.6	150.8	209.3	50.9	23.0	258.8
All classes	3,068.8	36.8	74.5	121.4	698.3	606.2	817.4	116.5	40.6	557.1

Table 7.--Area of commercial forest land by forest type, stand-size class, and ownership class, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type and stand-size class	All owners	Ownership class								
		National[1/] Forest	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Jack pine										
Sawtimber	36.4	3.0	--	1.9	7.3	--	7.4	1.8	4.2	10.8
Poletimber	142.0	36.4	--	1.9	46.5	--	26.4	7.3	-	23.5
Sapling & seedling	69.4	--	--	3.8	31.3	--	11.1	1.7	1.7	19.8
All stands	247.8	39.4	--	7.6	85.1	--	44.9	10.8	5.9	54.1
Red pine										
Sawtimber	53.3	29.2	--	--	5.4	3.8	3.7	2.0	3.6	5.6
Poletimber	28.9	6.8	--	--	13.4	1.7	--	--	1.7	5.3
Sapling & seedling	50.4	21.0	--	1.9	14.3	--	9.4	1.9	1.9	--
All stands	132.6	57.0	--	1.9	33.1	5.5	13.1	3.9	7.2	10.9
White pine										
Sawtimber	30.8	7.3	--	--	7.4	3.4	5.5	--	--	7.2
Poletimber	5.7	--	--	--	1.7	--	--	--	--	4.0
Sapling & seedling	--	--	--	--	--	--	--	--	--	--
All stands	36.5	7.3	--	--	9.1	3.4	5.5	--	--	11.2
Balsam fir										
Sawtimber	79.7	18.6	--	3.5	18.1	2.0	5.5	11.2	--	20.8
Poletimber	92.7	15.9	--	7.5	14.7	2.1	7.1	3.9	3.9	37.6
Sapling & seedling	47.2	2.8	--	-	7.4	--	5.3	5.7	2.0	24.0
All stands	219.6	37.3	--	11.0	40.2	4.1	17.9	20.8	5.9	82.4
White spruce										
Sawtimber	13.7	10.0	--	--	--	--	2.0	--	--	1.7
Poletimber	12.5	8.7	--	--	--	--	--	--	2.1	1.7
Sapling & seedling	5.7	--	--	1.7	--	--	2.0	--	--	2.0
All stands	31.9	18.7	--	1.7	--	--	4.0	--	2.1	5.4
Black spruce										
Sawtimber	1.8	--	--	--	--	--	--	--	--	1.8
Poletimber	27.8	--	--	--	9.3	--	5.5	--	--	13.0
Sapling & seedling	81.6	18.8	--	1.7	12.7	--	9.0	4.3	1.9	33.2
All stands	111.2	18.8	--	1.7	22.0	--	14.5	4.3	1.9	48.0
Northern white-cedar										
Sawtimber	44.7	4.8	--	3.8	14.1	1.8	7.3	--	1.8	11.1
Poletimber	55.4	25.1	--	1.7	8.6	--	3.6	--	--	16.4
Sapling & seedling	7.7	0.7	--	--	1.7	--	1.8	--	1.8	1.7
All stands	107.8	30.6	--	5.5	24.4	1.8	12.7	--	3.6	29.2

(Table 7 continued on next page)

[1/] Northern white-cedar and tamarack forest types are classified as mixed swamp conifer on the Chequamegon National Forest management plan.

(Table 7 continued)

Forest type and stand-size class	All owners	Ownership class								
		National Forest[1/]	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Tamarack										
Sawtimber	9.3	--	--	--	--	--	2.0	1.8	1.8	3.7
Poletimber	40.5	11.5	--	3.5	5.4	--	1.8	--	--	18.3
Sapling & seedling	61.7	1.4	--	1.8	7.4	--	7.1	9.4	3.7	30.9
All stands	111.5	12.9	--	5.3	12.8	--	10.9	11.2	5.5	52.9
Oak-hickory										
Sawtimber	120.1	--	--	1.9	13.8	1.8	3.7	27.5	12.0	59.4
Poletimber	178.2	32.2	--	8.0	40.3	1.7	5.6	15.9	7.2	67.3
Sapling & seedling	117.3	2.3	--	5.7	29.9	--	37.4	4.2	--	37.8
All stands	415.6	34.5	--	15.6	84.0	3.5	46.7	47.6	19.2	164.5
Elm-ash-soft maple										
Sawtimber	107.9	1.4	--	7.0	27.9	--	12.6	16.3	3.6	39.1
Poletimber	215.4	17.6	--	3.5	59.0	2.1	28.8	18.5	7.2	78.7
Sapling & seedling	91.6	3.4	--	1.8	16.3	1.8	11.1	7.5	1.9	47.8
All stands	414.9	22.4	--	12.3	103.2	3.9	52.5	42.3	12.7	165.6
Maple-birch										
Sawtimber	451.6	49.7	--	20.0	92.1	16.2	62.5	35.1	22.3	153.7
Poletimber	816.5	154.6	--	19.7	164.0	7.5	94.2	54.4	40.8	281.3
Sapling & seedling	210.6	2.5	--	3.9	36.2	3.4	29.2	21.1	7.5	106.8
All stands	1,478.7	206.8	--	43.6	292.3	27.1	185.9	110.6	70.6	541.8
Aspen										
Sawtimber	176.7	1.4	--	9.3	37.2	11.3	11.2	24.1	11.0	71.2
Poletimber	771.1	85.3	--	20.6	156.7	22.0	48.0	94.4	40.4	303.7
Sapling & seedling	560.5	94.1	3.5	28.3	140.5	10.0	30.2	51.1	16.5	186.3
All stands	1,508.3	180.8	3.5	58.2	334.4	43.3	89.4	169.6	67.9	561.2
Paper birch										
Sawtimber	26.5	--	--	--	3.7	--	1.9	1.8	1.7	17.4
Poletimber	198.8	21.7	3.8	5.3	45.3	2.0	18.4	17.4	16.3	68.6
Sapling & seedling	43.5	5.3	--	1.8	5.7	--	1.8	5.6	--	23.3
All stands	268.8	27.0	3.8	7.1	54.7	2.0	22.1	24.8	18.0	109.3
Exotic										
Sawtimber	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--
Nonstocked	65.6	--	--	5.3	14.5	--	9.1	4.3	3.5	28.9
All types										
Sawtimber	1,152.5	125.4	--	47.4	227.0	40.3	125.3	121.6	62.0	403.5
Poletimber	2,585.5	415.8	3.8	71.7	564.9	39.1	239.4	211.8	119.6	919.4
Sapling & seedling	1,347.2	152.3	3.5	52.4	303.4	15.2	155.4	112.5	38.9	513.6
Nonstocked	65.6	--	--	5.3	14.5	--	9.1	4.3	3.5	28.9
All stands	5,150.8	693.5	7.3	176.8	1,109.8	94.6	529.2	450.2	224.0	1,865.4

[1/]Northern white-cedar and tamarack forest types are classified as mixed swamp conifer on the Chequamegon National Forest management plan.

Table 8.--Area of commercial forest land by forest type and county, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All counties	County					
		Ashland	Barron	Bayfield	Burnett	Douglas	Iron
Jack pine	247.8	0.7	2.3	58.1	54.6	74.2	--
Red pine	132.6	9.5	--	54.4	10.0	17.2	5.3
White pine	36.5	2.0	--	10.9	1.9	1.9	--
Balsam fir	219.6	52.0	--	20.8	--	44.0	35.1
White spruce	31.9	14.7	--	--	--	--	1.7
Black spruce	111.2	13.9	2.3	7.1	3.8	17.1	12.4
Northern white-cedar	107.8	22.7	--	5.4	--	5.7	38.3
Tamarack	111.5	13.4	2.3	6.2	5.7	9.5	3.6
Oak-hickory	415.6	2.0	46.0	66.8	79.0	59.4	5.2
Elm-ash-soft maple	414.9	26.9	9.2	33.6	29.2	57.2	27.9
Maple-birch	1,478.7	187.8	34.5	167.3	21.6	74.3	159.3
Aspen	1,508.3	138.1	46.0	253.7	90.4	208.4	71.8
Paper birch	268.8	20.1	13.8	54.4	13.3	49.6	17.3
Exotic	--	--	--	--	--	--	--
Nonstocked	65.6	--	2.3	1.8	7.6	9.4	--
All types	5,150.8	503.8	158.7	740.5	317.1	627.9	377.9

(Table 8 continued)

(Table 8 continued)

Forest type	County					
	Polk	Price	Rusk	Sawyer	Taylor	Washburn
Jack pine	13.2	2.2	--	1.7	--	40.8
Red pine	--	12.0	3.9	13.4	1.8	5.1
White pine	--	--	6.0	12.1	--	1.7
Balsam fir	--	41.8	2.0	15.4	8.5	--
White spruce	--	3.1	--	8.8	3.6	--
Black spruce	--	14.6	10.0	20.4	6.2	3.4
Northern white-cedar	--	17.4	2.0	9.4	3.5	3.4
Tamarack	5.4	28.5	2.0	10.2	14.5	10.2
Oak-hickory	66.9	--	18.0	26.4	--	45.9
Elm-ash-soft maple	14.9	60.5	43.8	45.4	42.5	23.8
Maple-birch	59.2	174.4	132.9	249.1	163.9	54.4
Aspen	53.9	166.2	120.7	151.6	83.4	124.1
Paper birch	7.3	17.6	17.8	28.3	15.7	13.6
Exotic	--	--	--	--	--	--
Nonstocked	--	12.5	4.0	15.5	10.8	1.7
All types	220.8	550.8	363.1	607.7	354.4	328.1

Table 9.--Area of commercial forest land by county and stand-size class, Northwest Unit, Wisconsin, 1983

(In thousand acres)

County	All stands	Stand-size class			
		Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Ashland	503.8	135.9	263.6	104.3	--
Barron	158.7	57.5	64.4	34.5	2.3
Bayfield	740.5	144.0	407.2	187.5	1.8
Burnett	317.1	74.5	133.3	101.7	7.6
Douglas	627.9	106.5	301.7	210.3	9.4
Iron	377.9	108.5	192.0	77.4	--
Polk	220.8	64.7	98.4	57.7	--
Price	550.8	97.9	256.6	183.8	12.5
Rusk	363.1	103.0	192.4	63.7	4.0
Sawyer	607.7	162.1	312.9	117.2	15.5
Taylor	354.4	52.0	179.4	112.2	10.8
Washburn	328.1	45.9	183.6	96.9	1.7
All counties	5,150.8	1,152.5	2,585.5	1,347.2	65.6

Table 10.--Area of commercial forest land by forest type, stand-size class, and site class, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type and stand-size class	All classes	Site class (cubic feet of growth per acre per year)					
		225+	165-224	120-164	85-119	50-84	20-49
Jack pine							
Sawtimber	36.4	--	--	--	7.0	16.6	12.8
Poletimber	142.0	--	--	--	5.7	75.2	61.1
Sapling & seedling	69.4	--	--	1.9	3.6	29.3	34.6
All stands	247.8	--	--	1.9	16.3	121.1	108.5
Red pine							
Sawtimber	53.3	--	--	8.4	37.5	7.4	--
Poletimber	28.9	--	--	3.5	23.6	1.8	--
Sapling & seedling	50.4	--	--	1.9	11.1	29.4	8.0
All stands	132.6	--	--	13.8	72.2	38.6	8.0
White pine							
Sawtimber	30.8	--	--	3.4	9.1	16.6	1.7
Poletimber	5.7	--	--	--	--	3.7	2.0
Sapling & seedling	--	--	--	--	--	--	--
All stands	36.5	--	--	3.4	9.1	20.3	3.7
Balsam fir							
Sawtimber	79.7	--	--	38.6	19.8	14.3	7.0
Poletimber	92.7	--	--	19.0	42.3	22.1	9.3
Sapling & seedling	47.2	--	--	15.8	11.2	12.9	7.3
All stands	219.6	--	--	73.4	73.3	49.3	23.6
White spruce							
Sawtimber	13.7	--	--	--	13.7	--	--
Poletimber	12.5	--	--	--	8.7	3.8	--
Sapling & seedling	5.7	--	--	--	2.0	2.0	1.7
All stands	31.9	--	--	--	24.4	5.8	1.7
Black spruce							
Sawtimber	1.8	--	--	--	--	1.8	--
Poletimber	27.8	--	--	--	3.5	--	24.3
Sapling & seedling	81.6	--	--	--	1.3	2.0	78.3
All stands	111.2	--	--	--	4.8	3.8	102.6
Northern white-cedar							
Sawtimber	44.7	--	--	--	--	15.8	28.9
Poletimber	55.4	--	--	--	--	10.8	44.6
Sapling & seedling	7.7	--	--	--	--	--	7.7
All stands	107.8	--	--	--	--	26.6	81.2

(Table 10 continued on next page)

(Table 10 continued)

Forest type and stand-size class	All classes	Site class (cubic feet of growth per acre per year)					
		225+	165-224	120-164	85-119	50-84	20-49
Tamarack							
Sawtimber	9.3	--	--	--	1.9	3.6	3.8
Poletimber	40.5	--	--	--	1.7	16.9	21.9
Sapling & seedling	61.7	--	--	--	1.7	18.5	41.5
All stands	111.5	--	--	--	5.3	39.0	67.2
Oak-hickory							
Sawtimber	120.1	--	--	--	14.0	79.2	26.9
Poletimber	178.2	--	--	--	30.2	117.3	30.7
Sapling & seedling	117.3	--	--	--	10.2	55.3	51.8
All stands	415.6	--	--	--	54.4	251.8	109.4
Elm-ash-soft maple							
Sawtimber	107.9	--	--	--	5.8	15.8	86.3
Poletimber	215.4	--	--	--	13.9	50.7	150.8
Sapling & seedling	91.6	--	--	--	1.8	9.6	80.2
All stands	414.9	--	--	--	21.5	76.1	317.3
Maple-birch							
Sawtimber	451.6	--	--	--	78.3	237.0	136.3
Poletimber	816.5	--	--	1.8	127.6	453.2	233.9
Sapling & seedling	210.6	--	--	--	20.5	113.0	77.1
All stands	1,478.7	--	--	1.8	226.4	803.2	447.3
Aspen							
Sawtimber	176.7	--	--	7.2	78.6	85.6	5.3
Poletimber	771.1	--	--	11.7	371.1	357.2	31.1
Sapling & seedling	560.5	--	--	5.9	218.4	254.5	81.7
All stands	1,508.3	--	--	24.8	668.1	697.3	118.1
Paper birch							
Sawtimber	26.5	--	--	--	1.8	8.2	16.5
Poletimber	198.8	--	--	1.9	22.4	99.3	75.2
Sapling & seedling	43.5	--	--	--	3.7	16.2	23.6
All stands	268.8	--	--	1.9	27.9	123.7	115.3
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Nonstocked	65.6	--	--	--	5.4	31.2	29.0
All types							
Sawtimber	1,152.5	--	--	57.6	267.5	501.9	325.5
Poletimber	2,585.5	--	--	37.9	650.7	1,212.0	684.9
Sapling & seedling	1,347.2	--	--	25.5	285.5	542.7	493.5
Nonstocked	65.6	--	--	--	5.4	31.2	29.0
All stands	5,150.8	--	--	121.0	1,209.1	2,287.8	1,532.9

Table 11.--Area of commercial forest land by forest type and stand-age class, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All ages	Stand-age class (years) 1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	247.8	16.8	29.4	34.1	50.6	83.9	24.0	3.6	3.5	1.9	--	--	--	--
Red pine	132.6	21.2	29.1	10.7	22.9	24.7	10.9	2.0	4.6	3.6	2.9	--	--	--
White pine	36.5	--	--	--	--	3.4	5.7	11.2	10.4	3.9	--	1.9	--	--
Balsam fir	219.6	19.5	13.0	22.6	21.8	27.5	59.1	35.0	3.4	8.9	1.8	3.8	3.2	--
White spruce	31.9	--	3.7	10.7	11.7	3.8	--	2.0	--	--	--	--	--	--
Black spruce	111.2	12.3	11.8	32.4	25.1	15.0	3.9	1.8	5.4	3.5	--	--	--	--
Northern white-cedar	107.8	--	1.8	5.2	0.7	20.6	3.8	14.4	10.1	13.8	13.2	5.3	6.4	12.5
Tamarack	111.5	7.0	27.6	21.8	7.0	16.8	5.4	1.7	7.7	11.0	--	1.9	1.8	1.8
Oak-hickory	415.6	74.6	31.7	11.0	18.5	45.1	106.3	31.4	35.2	23.8	11.8	21.6	4.6	--
Elm-ash-soft maple	414.9	25.3	37.5	33.5	36.2	56.1	49.3	44.6	36.5	29.8	24.2	18.6	16.1	7.2
Maple-birch	1,478.7	76.4	76.8	84.2	91.3	298.8	323.3	217.4	91.5	73.1	54.9	45.5	25.0	20.5
Aspen	1,508.3	249.2	204.6	160.1	230.8	347.7	189.9	83.5	31.7	10.8	--	--	--	--
Paper birch	268.8	12.9	16.6	25.2	44.0	76.6	51.7	30.5	5.6	1.9	--	3.8	--	--
Exotic	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	65.6	65.6	--	--	--	--	--	--	--	--	--	--	--	--
All types	5,150.8	580.8	483.6	451.5	560.6	1,020.0	833.3	479.1	245.6	186.0	108.8	102.4	57.1	42.0

Table 12.--Area of commercial forest land by forest type and site-index class, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All classes	Site-index class (feet) 11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91+
Jack pine	247.8	--	--	1.9	36.9	76.8	104.6	21.0	4.7	1.9
Red pine	132.6	--	--	1.8	1.8	30.3	57.1	33.3	8.3	--
White pine	36.5	--	--	--	3.7	20.3	9.1	--	3.4	--
Balsam fir	219.6	3.2	1.7	18.7	60.4	62.2	53.5	11.1	6.8	2.0
White spruce	31.9	--	--	--	1.7	3.8	10.7	15.7	--	--
Black spruce	111.2	--	33.8	47.2	21.6	3.8	4.8	--	--	--
Northern white-cedar	107.8	3.5	32.8	13.9	36.3	8.5	12.8	--	--	--
Tamarack	111.5	--	12.9	23.7	30.6	14.5	24.5	3.6	1.7	--
Oak-hickory	415.6	--	--	12.6	41.6	136.3	115.7	92.0	17.4	--
Elm-ash-soft maple	414.9	--	1.8	33.1	99.5	140.0	75.2	43.8	21.5	--
Maple-birch	1,478.7	--	--	12.5	88.4	346.4	528.9	356.8	129.4	16.3
Aspen	1,508.3	--	--	4.3	54.1	190.3	437.7	550.0	247.1	24.8
Paper birch	268.8	--	--	5.7	20.2	69.5	91.3	52.3	27.9	1.9
Exotic	--	--	--	--	--	--	--	--	--	--
Nonstocked	65.6	--	1.8	5.6	14.5	18.5	14.4	8.9	1.9	--
All types	5,150.8	6.7	84.8	181.0	511.3	1,121.2	1,540.3	1,188.5	470.1	46.9

Table 13.--Area of commercial forest land by forest type, stand-size class, and basal-area class, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine															
Sawtimber	36.4	--	--	--	1.9	1.8	1.8	5.4	8.9	5.6	0.8	8.5	1.7	--	--
Poletimber	142.0	--	--	--	1.9	1.9	9.5	7.6	26.4	13.2	49.8	24.3	5.5	1.9	--
Sapling & seedling	69.4	7.5	--	11.1	11.0	7.4	7.2	3.8	15.8	3.8	1.8	--	--	--	--
All stands	247.8	7.5	--	11.1	14.8	11.1	18.5	16.8	51.1	22.6	52.4	32.8	7.2	1.9	--
Red pine															
Sawtimber	53.3	--	--	--	1.0	2.0	1.9	--	--	1.0	3.7	16.1	11.9	13.7	2.0
Poletimber	28.9	--	--	--	--	--	1.7	1.7	1.9	3.5	2.7	5.1	6.9	5.4	--
Sapling & seedling	50.4	29.3	1.9	3.6	1.9	--	4.5	--	3.6	3.7	--	1.9	--	--	--
All stands	132.6	29.3	1.9	3.6	2.9	2.0	8.1	1.7	5.5	8.2	6.4	23.1	18.8	19.1	2.0
White pine															
Sawtimber	30.8	--	--	--	1.8	--	1.9	--	--	1.7	--	10.9	7.2	7.3	--
Poletimber	5.7	--	--	--	--	--	--	--	--	2.0	--	2.0	1.7	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	36.5	--	--	--	1.8	--	1.9	--	--	3.7	--	12.9	8.9	7.3	--
Balsam fir															
Sawtimber	79.7	--	--	--	--	3.8	16.3	1.9	7.1	3.7	3.6	16.3	21.3	3.7	2.0
Poletimber	92.7	--	--	1.8	--	--	14.6	10.4	1.8	11.5	5.4	13.3	15.6	14.7	3.6
Sapling & seedling	47.2	3.6	7.2	5.5	1.8	3.8	4.6	5.8	9.4	1.9	1.9	--	--	1.7	--
All stands	219.6	3.6	7.2	7.3	1.8	7.6	35.5	18.1	18.3	17.1	10.9	29.6	36.9	20.1	5.6
White spruce															
Sawtimber	13.7	--	--	--	--	--	--	--	--	--	--	--	--	3.7	10.0
Poletimber	12.5	--	--	--	--	--	--	--	--	--	--	--	8.7	3.8	--
Sapling & seedling	5.7	1.7	--	--	--	2.0	2.0	--	--	--	--	--	--	--	--
All stands	31.9	1.7	--	--	--	2.0	2.0	--	--	--	--	--	8.7	7.5	10.0
Black spruce															
Sawtimber	1.8	--	--	--	--	--	--	--	--	--	--	--	1.8	--	--
Poletimber	27.8	--	--	--	--	--	5.8	1.8	11.2	1.7	1.7	1.9	3.7	--	--
Sapling & seedling	81.6	3.4	3.4	12.7	5.5	25.9	5.1	7.0	6.6	5.7	2.0	--	4.3	--	--
All stands	111.2	3.4	3.4	12.7	5.5	25.9	10.9	8.8	17.8	7.4	3.7	1.9	9.8	--	--
Northern white-cedar															
Sawtimber	44.7	--	--	--	--	--	2.0	3.4	3.6	1.8	3.5	--	11.6	9.5	9.3
Poletimber	55.4	--	--	--	--	--	1.8	--	1.8	6.9	--	28.7	8.7	7.5	--
Sapling & seedling	7.7	--	0.7	--	1.8	--	3.5	--	--	--	--	--	--	1.7	--
All stands	107.8	--	0.7	--	1.8	--	7.3	3.4	5.4	8.7	3.5	28.7	20.3	18.7	9.3

(Table 13 continued on next page)

(Table 13 continued)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack															
Sawtimber	9.3	--	1.8	--	--	1.8	2.0	1.8	--	--	--	1.9	--	--	--
Poletimber	40.5	--	--	1.9	--	5.4	5.2	11.4	--	7.5	1.9	5.4	1.8	--	--
Sapling & seedling	61.7	5.1	1.8	13.4	9.1	5.3	12.8	3.5	5.4	1.8	3.5	--	--	--	--
All stands	111.5	5.1	3.6	15.3	9.1	12.5	20.0	16.7	5.4	9.3	5.4	7.3	1.8	--	--
Oak-hickory															
Sawtimber	120.1	--	--	--	6.0	2.3	1.9	15.6	1.9	16.5	6.0	36.9	28.9	4.1	--
Poletimber	178.2	--	--	1.7	--	1.9	5.6	5.2	18.0	24.4	24.2	56.5	20.9	19.8	--
Sapling & seedling	117.3	29.1	14.8	11.7	19.1	24.8	6.4	--	5.4	3.7	--	2.3	--	--	--
All stands	415.6	29.1	14.8	13.4	25.1	29.0	13.9	20.8	25.3	44.6	30.2	95.7	49.8	23.9	--
Elm-ash-soft maple															
Sawtimber	107.9	--	2.3	3.7	3.5	1.9	15.3	3.4	1.9	10.7	2.0	20.7	30.9	11.6	--
Poletimber	215.4	--	--	1.9	7.1	16.4	14.8	11.1	37.2	34.4	26.8	22.5	32.3	9.0	1.9
Sapling & seedling	91.6	8.3	8.0	16.3	7.6	14.6	13.4	3.6	3.5	9.2	5.4	--	1.7	--	--
All stands	414.9	8.3	10.3	21.9	18.2	32.9	43.5	18.1	42.6	54.3	34.2	43.2	64.9	20.6	1.9
Maple-birch															
Sawtimber	451.6	--	--	1.9	2.3	--	9.3	13.5	29.0	31.3	37.8	102.4	146.4	66.2	11.5
Poletimber	816.5	--	--	--	7.3	11.2	20.9	31.1	66.1	97.1	75.6	217.3	205.3	81.1	3.5
Sapling & seedling	210.6	9.2	11.0	20.0	15.5	28.4	30.0	24.0	18.4	16.7	9.4	22.5	3.5	2.0	--
All stands	1,478.7	9.2	11.0	21.9	25.1	39.6	60.2	68.6	113.5	145.1	122.8	342.2	355.2	149.3	15.0
Aspen															
Sawtimber	176.7	--	--	3.9	7.1	11.7	11.4	13.0	17.0	22.5	11.0	21.8	50.4	6.9	--
Poletimber	771.1	--	1.8	13.0	24.1	40.7	75.7	70.3	75.1	117.6	67.1	114.9	124.3	40.5	6.0
Sapling & seedling	560.5	72.1	93.2	69.5	64.5	83.1	60.3	31.1	46.6	23.7	3.6	11.0	1.8	--	--
All stands	1,508.3	72.1	95.0	86.4	95.7	135.5	147.4	114.4	138.7	163.8	81.7	147.7	176.5	47.4	6.0
Paper birch															
Sawtimber	26.5	--	--	--	--	1.9	--	--	3.6	2.3	1.8	7.4	7.7	1.8	--
Poletimber	198.8	--	--	1.9	6.2	3.7	27.1	5.6	9.4	10.8	23.4	39.3	53.1	14.5	3.8
Sapling & seedling	43.5	1.8	--	3.7	4.0	8.7	9.3	5.2	1.8	1.9	3.6	3.5	--	--	--
All stands	268.8	1.8	--	5.6	10.2	14.3	36.4	10.8	14.8	15.0	28.8	50.2	60.8	16.3	3.8
Exotic															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	65.6	38.8	8.8	3.6	5.5	1.7	3.6	1.9	--	--	1.7	--	--	--	--
All types															
Sawtimber	1,152.5	--	4.1	9.5	23.6	27.2	63.8	58.0	73.0	97.1	70.2	242.9	319.8	128.5	34.8
Poletimber	2,585.5	--	1.8	22.2	46.6	81.2	182.7	156.2	248.9	330.6	278.6	531.2	488.5	198.2	18.8
Sapling & seedling	1,347.2	171.1	142.0	167.5	141.8	204.0	159.1	84.0	116.5	72.1	31.2	41.2	11.3	5.4	--
Nonstocked	65.6	38.8	8.8	3.6	5.5	1.7	3.6	1.9	--	--	1.7	--	--	--	--
All stands	5,150.8	209.9	156.7	202.8	217.5	314.1	409.2	300.1	438.4	499.8	381.7	815.3	819.6	332.1	53.6

Table 14.--Area of commercial forest land by stocking class of growing-stock trees and stand-size class, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Stocking class (percent)	All stands	Stand-size class			
		Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Less than 16.7	65.6	--	--	--	65.6
16.7 to 60.9	718.3	163.7	279.1	275.5	--
61.0 to 100.9	2,198.2	516.4	1,215.0	466.8	--
101.0 to 133.9	1,792.8	398.9	968.0	425.9	--
134.0+	375.9	73.5	123.4	179.0	--
All classes	5,150.8	1,152.5	2,585.5	1,347.2	65.6

Table 15.--Area of commercial forest land in plantations by forest type and stand-age class, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All ages	Stand-age class (years)												
		1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	72.5	5.7	16.9	16.6	15.0	13.1	5.2	--	--	--	--	--	--	--
Red pine	97.9	21.2	29.1	10.7	13.9	21.0	--	2.0	--	--	--	--	--	--
White pine	5.1	--	--	--	--	1.7	1.7	--	1.7	--	--	--	--	--
White spruce	17.4	--	3.7	2.0	10.0	1.7	--	--	--	--	--	--	--	--
All types	192.9	26.9	49.7	29.3	38.9	37.5	6.9	2.0	1.7	--	--	--	--	--

Table 16.--Area of commercial forest land with conifer understory by forest type and conifer understory species, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All species	Conifer understory species								
		White pine	Red pine	Jack pine	Balsam fir	White spruce	Black spruce	Hemlock	Northern white-cedar	Other softwoods
Jack pine	92.5	1.9	43.1	43.9	3.6	--	--	--	--	--
Red pine	61.5	2.8	37.9	--	17.5	3.3	--	--	--	--
White pine	10.9	7.3	--	--	3.6	--	--	--	--	--
Balsam fir	116.5	--	--	--	116.5	--	--	--	--	--
White spruce	1.7	--	--	--	1.7	--	--	--	--	--
Black spruce	69.9	--	--	--	14.2	--	55.7	--	--	--
Northern white-cedar	54.3	--	--	--	46.4	--	--	--	6.1	1.8
Tamarack	70.1	--	--	--	22.4	--	27.7	--	--	20.0
Oak-hickory	72.6	13.4	9.3	33.2	16.7	--	--	--	--	--
Elm-ash-soft maple	110.3	--	--	--	99.4	1.7	3.9	3.5	--	1.8
Maple-birch	387.7	28.4	1.7	--	322.2	11.1	--	24.3	--	--
Aspen	377.0	40.2	7.4	12.9	275.6	17.2	14.4	1.8	2.0	5.5
Paper birch	57.5	--	--	--	53.6	--	3.9	--	--	--
Exotic	--	--	--	--	--	--	--	--	--	--
Nonstocked	5.8	2.3	--	--	3.5	--	--	--	--	--
All types	1,488.3	96.3	99.4	90.0	996.9	33.3	105.6	29.6	8.1	29.1

Table 17.--Area of noncommercial forest land by ownership class, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All areas	Productive-reserved areas	Unproductive areas
National Forest	86.7	24.1[1/]	62.6
Miscellaneous federal	45.0	45.0	--
State	58.0	39.8	18.2
County and municipal	24.9	5.7	19.2
Indian	2.2	--	2.2
Forest industry	5.3	--	5.3
Farmer	39.3	--	39.3
Misc. private-corp.	1.8	--	1.8
Misc. private-indiv.	17.2	--	17.2
Total	280.4	114.6	165.8

[1/] Includes 17.0 thousand acres of productive-deferred areas.

Table 18.--Area of noncommercial forest land by forest type, Northwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All areas	Productive-reserved areas[1/]	Unproductive areas
Jack pine	2.6	2.6	--
Red pine	--	--	--
White pine	--	--	--
Balsam fir	7.8	0.9	6.9
White spruce	--	--	--
Black spruce	113.2	6.9	106.3
Northern white-cedar	4.5	0.7	3.8
Tamarack	10.0	--	10.0
Oak-hickory	7.1	5.1	2.0
Elm-ash-soft maple	50.9	16.0	34.9
Maple-birch	42.6	42.6	--
Aspen	38.6	38.6	--
Paper birch	1.2	1.2	--
Exotic	--	--	--
Nonstocked	1.9	--	1.9
All types	280.4	114.6	165.8

[1/] Includes 17.0 thousand acres of productive-deferred areas.

Table 19.--Number of all live trees on commercial forest land by species group and diameter class, Northwest Unit, Wisconsin, 1983

(In thousand trees)

Species group	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods															
Jack pine	118,604	31,400	32,629	30,159	16,542	5,594	1,829	397	50	4	--	--	--	--	--
Red pine	51,463	20,610	9,590	8,318	5,877	3,955	1,625	581	370	326	153	35	23	--	--
White pine	24,569	10,910	4,100	1,659	2,381	1,730	1,131	886	625	504	265	168	194	16	--
White spruce	39,719	16,370	5,880	7,469	5,197	2,781	1,098	558	236	99	13	9	9	--	--
Black spruce	115,259	68,400	34,380	9,676	2,241	453	77	14	18	--	--	--	--	--	--
Balsam fir	321,117	184,570	71,770	35,953	18,069	7,913	2,048	551	211	28	4	--	--	--	--
Hemlock	11,284	2,330	1,430	2,001	1,419	1,457	1,062	669	402	298	134	27	52	3	--
Tamarack	62,445	34,860	14,940	7,251	3,809	1,162	319	78	20	3	3	--	--	--	--
Northern white-cedar	43,341	7,980	10,670	9,175	6,992	4,365	2,854	785	338	131	36	11	4	--	--
Other softwoods	48	--	--	29	--	--	19	--	--	--	--	--	--	--	--
Total	787,849	377,430	185,389	111,690	62,527	29,410	12,062	4,519	2,270	1,393	608	250	282	19	--
Hardwoods															
White oak	74,699	52,020	9,590	4,958	3,698	1,580	1,264	811	383	189	99	64	36	7	--
Select red oak	116,501	45,990	16,960	19,281	15,380	9,277	5,391	2,259	1,101	416	219	108	107	12	--
Other red oak	37,545	22,880	4,780	4,597	2,080	1,297	776	575	296	99	68	68	29	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hickory	7,265	2,880	2,530	1,039	556	84	156	14	6	--	--	--	--	--	--
Basswood	80,814	26,510	12,330	13,935	11,579	8,552	4,392	2,110	799	337	148	68	51	3	--
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	52,446	21,910	13,000	7,483	4,074	2,733	1,336	862	437	306	138	63	87	17	--
Hard maple	465,585	246,130	111,560	56,562	27,872	12,224	5,495	2,878	1,472	750	344	149	142	7	--
Soft maple	527,976	280,865	140,980	62,874	26,523	9,951	3,560	1,883	701	350	185	69	29	6	--
Elm	53,756	24,840	9,660	6,850	4,877	2,824	2,111	1,184	705	355	164	87	81	15	3
Black ash	169,786	92,790	35,930	23,103	9,915	5,142	1,915	601	267	82	18	14	9	--	--
White & green ash	34,409	19,200	3,960	4,185	2,690	2,310	1,264	472	256	57	15	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	270	270	--	--	--	--	--	--	--	--	--	--	--	--	--
Willow	210	--	190	--	--	--	10	9	--	--	--	--	--	1	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	7,691	4,570	1,690	628	363	220	95	86	39	--	--	--	--	--	--
Bigtooth aspen	114,805	71,740	11,000	10,183	8,440	7,194	4,250	1,262	513	157	48	12	6	--	--
Quaking aspen	694,177	484,337	75,589	51,440	40,727	24,416	11,084	4,647	1,453	374	69	36	5	--	--
Paper birch	188,977	55,730	52,140	40,356	26,794	9,637	3,262	848	175	27	6	2	--	--	--
Black cherry	55,580	45,950	3,630	3,216	1,674	809	243	58	--	--	--	--	--	--	--
Black walnut	10	--	--	--	--	--	10	--	--	--	--	--	--	--	--
Butternut	1,375	--	480	92	525	61	146	26	37	--	8	--	--	--	--
Other hardwoods	68	--	--	47	21	--	--	--	--	--	--	--	--	--	--
Noncommercial species	219,262	180,780	32,780	4,422	942	211	113	14	--	--	--	--	--	--	--
Total	2,903,207	1,679,392	538,779	315,251	188,730	98,522	46,873	20,599	8,640	3,499	1,529	740	582	68	3
All species	3,691,056	2,056,822	724,168	426,941	251,257	127,932	58,935	25,118	10,910	4,892	2,137	990	864	87	3

Table 20.--Number of growing-stock trees on commercial forest land by species group and diameter class, Northwest Unit, Wisconsin, 1983

(In thousand trees)

Species group	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods															
Jack pine	114,854	31,040	31,929	28,766	15,831	5,272	1,744	234	34	4	--	--	--	--	--
Red pine	51,117	20,610	9,590	8,151	5,763	3,910	1,616	575	370	321	153	35	23	--	--
White pine	23,933	10,910	4,100	1,582	2,280	1,548	1,063	816	572	482	253	143	173	11	--
White spruce	39,171	16,370	5,530	7,428	5,146	2,743	1,047	541	236	99	13	9	9	--	--
Black spruce	113,106	68,020	33,350	9,054	2,120	453	77	14	18	--	--	--	--	--	--
Balsam fir	317,302	183,900	70,010	35,689	17,364	7,602	1,978	527	205	23	4	--	--	--	--
Hemlock	9,272	2,330	1,050	1,563	960	1,174	850	540	379	250	101	27	47	1	--
Tamarack	61,307	34,620	14,760	6,975	3,481	1,089	293	63	20	3	3	--	--	--	--
Northern white-cedar	36,226	7,260	9,650	7,611	5,520	3,211	2,061	557	238	93	18	5	2	--	--
Other softwoods	48	--	--	29	--	--	19	--	--	--	--	--	--	--	--
Total	766,336	375,060	179,969	106,848	58,465	27,002	10,748	3,867	2,072	1,275	545	219	254	12	--
Hardwoods															
White oak	67,579	48,850	8,140	3,781	3,407	1,309	1,021	599	247	118	60	30	14	3	--
Select red oak	108,856	45,170	15,750	17,131	13,948	8,522	4,752	2,007	937	317	152	84	78	8	--
Other red oak	29,798	21,320	2,260	2,891	1,359	908	438	321	191	51	38	19	2	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hickory	6,866	2,880	2,280	953	556	84	99	14	--	--	--	--	--	--	--
Basswood	74,713	24,820	11,620	12,438	10,766	8,030	3,993	1,874	705	257	117	58	35	--	--
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	41,498	20,470	10,190	4,341	2,626	1,912	805	557	249	199	82	33	31	3	--
Hard maple	425,240	235,920	102,360	46,320	23,391	9,365	3,959	2,017	1,031	516	211	91	55	4	--
Soft maple	481,751	265,038	130,310	52,417	21,862	7,532	2,527	1,272	408	229	118	24	14	--	--
Elm	48,790	23,910	8,650	5,688	4,263	2,316	1,786	1,009	580	302	142	76	57	8	3
Black ash	160,351	90,450	32,280	21,225	8,953	4,896	1,675	527	237	75	14	14	5	--	--
White & green ash	33,194	19,200	3,570	4,053	2,492	2,124	1,093	387	215	45	15	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	270	270	--	--	--	--	--	--	--	--	--	--	--	--	--
Willow	10	--	--	--	--	--	10	--	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	7,564	4,570	1,690	580	335	197	85	79	28	--	--	--	--	--	--
Bigtooth aspen	111,472	71,590	9,900	9,571	8,053	6,797	3,852	1,114	421	132	37	5	--	--	--
Quaking aspen	669,213	479,297	71,749	45,497	37,172	21,385	9,190	3,616	1,029	247	20	10	1	--	--
Paper birch	175,569	53,080	48,850	36,536	24,733	8,733	2,803	692	121	18	3	--	--	--	--
Black cherry	51,411	45,130	3,090	1,673	905	460	136	17	--	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butternut	1,013	--	480	92	273	41	88	9	27	--	3	--	--	--	--
Other hardwoods	21	--	--	--	21	--	--	--	--	--	--	--	--	--	--
Total	2,495,179	1,451,965	463,169	265,187	165,115	84,611	38,312	16,111	6,426	2,506	1,012	444	292	26	3
All species	3,261,515	1,827,025	643,138	372,035	223,580	111,613	49,060	19,978	8,498	3,781	1,557	663	546	38	3

Table 21.--Net volume of growing stock on commercial forest land by species group, Northwest Unit, Wisconsin, 1968 and 1983

(In thousand cubic feet)

Species group	1968	1983
Softwoods		
Jack pine	188,200	237,849
Red pine	80,000	179,071
White pine	107,300	154,382
White spruce	33,400	121,342
Black spruce	27,900	41,303
Balsam fir	223,600	299,183
Hemlock	77,900	66,348
Tamarack	63,900	59,582
Northern white-cedar	108,900	124,494
Other softwoods	--	325
Total	911,100	1,283,879
Hardwoods		
White oak	51,500	73,731
Select red oak	227,500	392,975
Other red oak	39,100	41,248
Hickory	2,500	9,803
Basswood	241,300	334,289
Beech	--	--
Yellow birch	94,800	85,401
Hard maple	376,700	553,791
Soft maple	241,000	468,019
Elm	164,200	141,996
Ash	220,500	310,079
Cottonwood	100	--
Willow	--	163
Balsam poplar	6,400	8,547
Bigtooth aspen	198,900	272,055
Quaking aspen	780,600	872,273
Paper birch	326,800	438,362
Black cherry	11,700	19,820
Black walnut	--	--
Butternut	3,100	4,841
Other hardwoods	300	118
Total	2,987,000	4,027,511
All species	3,898,100	5,311,390

Table 22.--Net volume of all live trees on commercial forest land by species group and diameter class, Northwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods													
Jack pine	249,766	79,934	85,370	50,257	24,793	8,030	1,248	134	--	--	--	--	--
Red pine	180,953	30,327	35,654	40,133	24,535	13,010	11,094	13,553	8,260	2,376	2,011	--	--
White pine	165,336	2,858	10,791	14,846	17,802	21,295	20,765	23,063	16,281	12,980	21,644	3,011	--
White spruce	123,124	15,993	29,298	29,315	19,185	14,168	8,067	4,687	794	683	934	--	--
Black spruce	43,208	23,005	12,772	4,997	1,398	374	662	--	--	--	--	--	--
Balsam fir	306,717	74,005	95,431	80,602	34,776	13,541	6,890	1,270	202	--	--	--	--
Hemlock	74,822	2,558	4,801	9,916	12,451	12,002	11,032	10,348	5,927	1,735	3,613	439	--
Tamarack	62,600	22,116	21,690	11,255	4,933	1,737	572	149	148	--	--	--	--
Northern white-cedar	148,777	22,811	32,996	34,283	32,113	12,885	7,784	4,093	1,174	407	231	--	--
Other softwoods	325	70	--	--	255	--	--	--	--	--	--	--	--
Total	1,355,628	273,677	328,803	275,604	172,241	97,042	68,114	57,297	32,786	18,181	28,433	3,450	--
Hardwoods													
White oak	93,828	10,655	16,626	12,703	15,420	14,307	8,974	5,692	3,900	2,853	2,018	680	--
Select red oak	436,775	61,404	87,572	89,018	79,505	47,709	31,839	14,975	9,791	6,384	7,209	1,369	--
Other red oak	64,635	9,675	8,991	10,141	9,226	10,141	6,942	3,034	2,514	2,654	1,317	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hickory	11,093	3,728	3,438	1,004	2,454	300	169	--	--	--	--	--	--
Basswood	360,691	36,970	66,717	88,653	70,034	47,253	24,044	12,434	6,969	4,008	3,457	152	--
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	118,645	11,573	17,396	23,296	16,475	15,290	10,652	9,772	5,159	2,940	4,779	1,313	--
Hard maple	674,694	159,851	157,530	116,360	81,331	60,432	41,018	26,177	14,493	8,029	8,760	713	--
Soft maple	566,477	194,167	150,703	93,626	49,632	36,816	17,088	11,874	7,555	2,944	1,812	260	--
Elm	164,784	10,897	20,517	23,894	29,664	24,443	20,565	13,252	7,899	5,040	6,000	2,172	441
Black ash	241,212	85,165	59,414	47,921	26,227	11,414	6,548	2,684	698	774	367	--	--
White & green ash	91,791	13,018	15,705	22,978	19,694	10,474	7,217	1,945	760	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Willow	411	--	--	--	163	175	--	--	--	--	--	73	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	9,263	1,028	1,781	2,062	1,414	1,844	1,134	--	--	--	--	--	--
Bigtooth aspen	286,444	29,532	53,503	77,691	70,418	29,243	16,196	6,496	2,462	621	282	--	--
Quaking aspen	952,087	178,092	246,672	233,078	155,483	88,622	35,451	11,231	2,065	1,115	278	--	--
Paper birch	474,727	150,998	162,759	93,348	45,776	16,446	4,280	833	176	111	--	--	--
Black cherry	33,587	11,783	10,070	7,376	3,265	1,093	--	--	--	--	--	--	--
Black walnut	147	--	--	--	147	--	--	--	--	--	--	--	--
Butternut	7,245	390	2,937	648	1,825	405	811	--	229	--	--	--	--
Other hardwoods	226	108	118	--	--	--	--	--	--	--	--	--	--
Noncommercial species	14,997	8,226	3,991	1,391	1,171	218	--	--	--	--	--	--	--
Total	4,603,759	977,260	1,086,440	945,188	679,324	416,625	232,928	120,399	64,670	37,473	36,279	6,732	441
All species	5,959,387	1,250,937	1,415,243	1,220,792	851,565	513,667	301,042	177,696	97,456	55,654	64,712	10,182	441

Table 23.--Net volume of timber on commercial forest land by class of timber and softwoods and hardwoods, Northwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Class of timber	All species	Softwoods	Hardwoods
Live trees			
Growing-stock trees			
Poletimber	3,275,211	578,631	2,696,580
Sawtimber			
Saw log portion	1,355,647	529,409	826,238
Upper stem portion	680,532	175,839	504,693
Subtotal	2,036,179	705,248	1,330,931
Total growing stock	5,311,390	1,283,879	4,027,511
Cull trees			
Rough and rotten cull trees			
Poletimber	337,244	24,036	313,208
Sawtimber	218,083	33,622	184,461
Subtotal	555,327	57,658	497,669
Short-log trees	92,670	14,091	78,579
Total cull	647,997	71,749	576,248
All live trees	5,959,387	1,355,628	4,603,759
Salvable dead trees			
Growing-stock trees	275,356	49,733	225,623
Cull trees	4,563	1,172	3,391
All salvable dead trees	279,919	50,905	229,014
All classes	6,239,306	1,406,533	4,832,773

Table 24.--Net volume of all live trees by individual species, Northwest Unit, Wisconsin, 1983

Species	All live trees					Saw log size trees	
	Total all live	Growing stock	Short-log cull	Rough and rotten cull	Total saw log	Sawtimber	Short-log
	-Thousand cubic feet-				-Thousand board feet[1]-		
Softwoods							
Jack pine	249,766	237,849	3,594	8,323	415,987	403,480	12,507
Red pine	180,953	179,071	71	1,811	654,661	654,363	298
White pine	165,336	154,382	2,863	8,091	756,434	745,829	10,605
White spruce	123,124	121,342	441	1,341	370,888	368,931	1,957
Black spruce	43,208	41,303	--	1,905	33,543	33,543	--
Balsam fir	306,717	299,183	899	6,635	590,861	588,647	2,214
Hemlock	74,822	66,348	2,768	5,706	271,636	264,927	6,709
Tamarack	62,600	59,582	429	2,589	96,244	94,390	1,854
Northern white-cedar	148,777	124,494	3,026	21,257	398,818	388,516	10,302
Scotch pine	255	255	--	--	1,392	1,392	--
Norway spruce	70	70	--	--	--	--	--
Total	1,355,628	1,283,879	14,091	57,658	3,590,464	3,544,018	46,446
Hardwoods							
White oak	57,145	43,887	3,877	9,381	129,553	119,535	10,018
Swamp white oak	826	826	--	--	2,475	2,475	--
Bur oak	35,857	29,018	1,625	5,214	84,259	80,008	4,251
Northern red oak	436,775	392,975	10,730	33,070	870,450	846,693	23,757
Northern pin oak	57,287	35,779	5,122	16,386	103,197	91,453	11,744
Black oak	7,348	5,469	220	1,659	9,918	9,424	494
Bitternut hickory	11,093	9,803	671	619	11,496	9,661	1,835
American basswood	360,691	334,289	4,761	21,641	743,128	732,985	10,143
Yellow birch	118,645	85,401	5,114	28,130	233,210	221,270	11,940
Sugar maple	674,694	553,791	15,623	105,280	942,711	905,072	37,639
Red maple	557,339	460,778	7,006	89,555	491,932	472,484	19,448
Silver maple	9,138	7,241	274	1,623	26,781	26,078	703
American elm	151,900	130,729	7,113	14,058	401,615	383,615	18,000
Slippery elm	5,494	4,352	196	946	12,685	12,179	506
Rock elm	7,390	6,915	132	343	15,581	15,247	334
Black ash	241,212	226,230	695	14,287	271,870	269,758	2,112
White ash	81,760	74,940	1,084	5,736	177,007	174,423	2,584
Green ash	10,031	8,909	269	853	16,827	16,148	679
Black willow	411	163	--	248	720	720	--
Balsam poplar	9,263	8,547	--	716	17,149	17,149	--
Bigtooth aspen	286,444	272,055	2,826	11,563	535,162	530,658	4,504
Quaking aspen	952,087	872,273	7,700	72,114	1,272,276	1,255,261	17,015
Paper birch	474,727	438,362	3,439	32,926	302,983	293,605	9,378
Black cherry	33,587	19,820	102	13,665	14,450	14,138	312
Black walnut	147	--	--	147	--	--	--
Butternut	7,245	4,841	--	2,404	13,381	13,381	--
Boxelder	226	118	--	108	--	--	--
Noncommercial species	14,997	--	--	14,997	--	--	--
Total	4,603,759	4,027,511	78,579	497,669	6,700,816	6,513,420	187,396
All species	5,959,387	5,311,390	92,670	555,327	10,291,280	10,057,438	233,842

[1] International 1/4-inch rule.

Table 25.--Net volume of noncommercial species on commercial forest land by individual species, Northwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species	Cull volume
American hornbeam	223
Eastern hophornbeam	14,039
Chokecherry	231
Mountain ash	504
All species	14,997

Table 26.--Net volume of growing stock on commercial forest land by species group and county, Northwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All counties	County					
		Ashland	Barron	Bayfield	Burnett	Douglas	Iron
Softwoods							
Jack pine	237,849	1,100	456	67,583	56,886	62,569	--
Red pine	179,071	17,833	257	53,262	14,505	12,871	6,102
White pine	154,382	23,513	2,628	37,796	6,784	7,465	7,866
White spruce	121,342	41,820	--	11,297	--	12,831	12,126
Black spruce	41,303	6,961	579	1,011	357	8,250	7,746
Balsam fir	299,183	63,547	--	34,691	--	60,080	57,619
Hemlock	66,348	12,573	--	7,157	--	1,220	17,168
Tamarack	59,582	3,673	415	5,497	1,306	7,879	3,006
Northern white-cedar	124,494	38,217	--	13,299	--	9,479	31,936
Other softwoods	325	--	--	--	--	--	70
Total	1,283,879	209,237	4,335	231,593	79,838	182,644	143,639
Hardwoods							
White oak	73,731	141	17,152	637	10,839	1,240	--
Select red oak	392,975	6,794	28,970	107,971	33,600	20,538	7,631
Other red oak	41,248	--	1,312	2,877	15,756	2,054	--
Select hickory	--	--	--	--	--	--	--
Other hickory	9,803	--	758	--	542	--	--
Basswood	334,289	39,820	7,701	26,580	5,821	15,337	29,609
Beech	--	--	--	--	--	--	--
Yellow birch	85,401	15,111	81	5,827	135	5,200	17,739
Hard maple	553,791	124,845	4,502	72,378	4,106	27,163	80,295
Soft maple	468,019	55,722	7,540	53,614	11,300	36,532	33,959
Elm	141,996	20,076	6,425	10,954	6,777	8,107	15,159
Black ash	226,230	24,910	3,391	17,401	10,717	40,194	13,714
White & green ash	83,849	6,408	6,260	4,983	1,575	2,293	3,950
Sycamore	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--
Willow	163	--	--	--	163	--	--
Hackberry	--	--	--	--	--	--	--
Balsam poplar	8,547	--	--	2,272	--	5,193	957
Bigtooth aspen	272,055	14,604	14,454	72,999	26,716	11,830	9,053
Quaking aspen	872,273	93,501	27,989	151,387	49,312	109,617	55,132
Paper birch	438,362	35,944	12,523	94,786	19,277	77,957	29,867
Black cherry	19,820	3,912	619	--	1,708	--	3,099
Black walnut	--	--	--	--	--	--	--
Butternut	4,841	--	232	--	394	--	--
Other hardwoods	118	--	--	--	--	118	--
Total	4,027,511	441,788	139,909	624,666	198,738	363,373	300,164
All species	5,311,390	651,025	144,244	856,259	278,576	546,017	443,803

(Table 26 continued on next page)

(Table 26 continued)

Species group	County					
	Polk	Price	Rusk	Sawyer	Taylor	Washburn
Softwoods						
Jack pine	6,436	2,898	--	2,989	--	36,932
Red pine	232	28,406	4,262	28,666	2,634	10,041
White pine	3,012	5,659	10,684	35,563	5,754	7,658
White spruce	430	12,444	1,148	18,120	10,907	219
Black spruce	262	5,797	2,792	4,112	3,226	210
Balsam fir	--	38,493	8,064	21,339	12,072	3,278
Hemlock	--	9,115	1,034	9,589	8,492	--
Tamarack	2,292	14,788	3,233	5,804	7,264	4,425
Northern white-cedar	--	14,597	778	10,505	1,965	3,718
Other softwoods	--	--	--	--	--	255
Total	12,664	132,197	31,995	136,687	52,314	66,736
Hardwoods						
White oak	19,496	469	5,050	6,909	416	11,382
Select red oak	42,055	11,081	30,380	53,396	15,272	35,287
Other red oak	10,756	--	1,008	806	--	6,679
Select hickory	--	--	--	--	--	--
Other hickory	1,358	--	2,975	1,787	2,383	--
Basswood	10,961	27,890	44,741	64,954	43,018	17,857
Beech	--	--	--	--	--	--
Yellow birch	106	7,493	2,228	21,849	8,423	1,209
Hard maple	6,804	59,126	40,501	75,803	45,431	12,837
Soft maple	14,517	64,401	30,751	55,402	81,770	22,511
Elm	6,845	18,026	17,674	19,163	8,411	4,379
Black ash	7,714	25,834	19,273	28,745	18,247	16,090
White & green ash	4,630	8,231	11,922	16,903	13,104	3,590
Sycamore	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--
Willow	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	125
Bigtooth aspen	16,049	18,238	8,472	30,757	12,549	36,334
Quaking aspen	39,621	74,300	89,767	80,740	40,919	59,988
Paper birch	12,883	28,150	25,856	55,045	15,637	30,437
Black cherry	1,659	2,708	2,550	1,333	734	1,498
Black walnut	--	--	--	--	--	--
Butternut	2,143	--	1,152	430	137	353
Other hardwoods	--	--	--	--	--	--
Total	197,597	345,947	334,300	514,022	306,451	260,556
All species	210,261	478,144	366,295	650,709	358,765	327,292

Table 27.--Net volume of sawtimber on commercial forest land by species group and county, Northwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All counties	County					
		Ashland	Barron	Bayfield	Burnett	Douglas	Iron
Softwoods							
Jack pine	403,480	1,579	1,253	107,155	100,555	102,435	--
Red pine	654,363	62,006	1,501	213,680	20,209	64,375	30,287
White pine	745,829	102,388	13,470	183,374	32,526	39,005	40,615
White spruce	368,931	122,203	--	50,760	--	47,144	53,751
Black spruce	33,543	7,543	--	--	--	5,341	10,582
Balsam fir	588,647	124,121	--	80,986	--	113,036	113,300
Hemlock	264,927	52,129	--	30,216	--	5,190	70,495
Tamarack	94,390	3,902	--	17,225	2,123	12,525	538
Northern white-cedar	388,516	100,262	--	43,949	--	33,000	113,973
Other softwoods	1,392	--	--	--	--	--	--
Total	3,544,018	576,133	16,224	727,345	155,413	422,051	433,541
Hardwoods							
White oak	202,018	700	63,458	1,819	24,620	618	--
Select red oak	846,693	24,764	82,632	144,423	74,258	35,409	10,148
Other red oak	100,877	--	2,743	706	48,217	1,688	--
Select hickory	--	--	--	--	--	--	--
Other hickory	9,661	--	1,724	--	--	--	--
Basswood	732,985	89,513	28,365	60,163	14,694	37,958	66,205
Beech	--	--	--	--	--	--	--
Yellow birch	221,270	44,736	--	16,523	--	17,525	61,749
Hard maple	905,072	217,162	12,336	83,277	14,114	47,871	112,437
Soft maple	498,562	60,341	3,897	34,122	20,564	41,768	30,150
Elm	411,041	63,104	22,257	28,464	18,144	23,468	39,684
Black ash	269,758	19,384	4,624	22,894	25,637	50,738	17,147
White & green ash	190,571	13,094	12,623	5,896	3,035	1,798	13,814
Sycamore	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--
Willow	720	--	--	--	720	--	--
Hackberry	--	--	--	--	--	--	--
Balsam poplar	17,149	--	--	5,489	--	9,754	1,906
Bigtooth aspen	530,658	23,476	38,428	128,292	51,503	29,512	11,117
Quaking aspen	1,255,261	168,058	34,575	216,299	73,146	152,679	88,213
Paper birch	293,605	25,058	2,482	66,536	10,466	52,661	32,279
Black cherry	14,138	3,502	1,108	--	1,314	--	4,099
Black walnut	--	--	--	--	--	--	--
Butternut	13,381	--	1,320	--	2,357	--	--
Other hardwoods	--	--	--	--	--	--	--
Total	6,513,420	752,892	312,572	814,903	382,789	503,447	488,948
All species	10,057,438	1,329,025	328,796	1,542,248	538,202	925,498	922,489

[1/] International 1/4-inch rule.

(Table 27 continued on next page)

(Table 27 continued)

Species group	County					
	Polk	Price	Rusk	Sawyer	Taylor	Washburn
Softwoods						
Jack pine	9,113	11,184	--	9,449	--	60,757
Red pine	1,312	90,249	20,241	108,207	9,318	32,978
White pine	16,995	28,960	53,965	171,614	26,413	36,504
White spruce	2,347	35,982	5,178	26,548	23,875	1,143
Black spruce	--	2,495	--	6,246	1,336	--
Balsam fir	--	72,749	16,989	37,764	21,508	8,194
Hemlock	--	38,075	3,374	38,944	26,504	--
Tamarack	5,737	20,912	4,099	6,471	11,134	9,724
Northern white-cedar	--	33,177	3,543	41,694	6,496	12,422
Other softwoods	--	--	--	--	--	1,392
Total	35,504	333,783	107,389	446,937	126,584	163,114
Hardwoods						
White oak	64,835	1,869	12,067	8,510	1,137	22,385
Select red oak	115,949	12,190	96,480	135,497	47,402	67,541
Other red oak	34,078	--	4,631	2,549	--	6,265
Select hickory	--	--	--	--	--	--
Other hickory	--	--	3,598	--	4,339	--
Basswood	29,508	54,208	102,459	123,045	99,957	26,910
Beech	--	--	--	--	--	--
Yellow birch	--	20,491	1,863	39,626	14,005	4,752
Hard maple	15,647	97,403	103,922	119,440	55,141	26,322
Soft maple	15,950	67,789	32,370	76,605	88,823	26,183
Elm	20,687	52,448	55,885	48,044	23,738	15,118
Black ash	8,209	27,173	31,494	33,077	14,532	14,849
White & green ash	6,205	24,506	25,916	41,781	36,290	5,613
Sycamore	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--
Willow	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--
Bigtooth aspen	34,288	22,819	20,056	82,465	18,625	70,077
Quaking aspen	44,271	114,047	121,632	139,002	25,466	77,873
Paper birch	6,104	31,385	7,678	33,710	11,995	13,251
Black cherry	--	2,041	1,382	692	--	--
Black walnut	--	--	--	--	--	--
Butternut	2,718	--	5,187	--	743	1,056
Other hardwoods	--	--	--	--	--	--
Total	398,449	528,369	626,620	884,043	442,193	378,195
All species	433,953	862,152	734,009	1,330,980	568,777	541,309

Table 28.--Net volume of growing stock on commercial forest land by species group and diameter class, Northwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods													
Jack pine	237,849	77,133	82,765	48,168	23,845	4,867	937	134	--	--	--	--	--
Red pine	179,071	29,830	35,016	39,704	24,411	12,867	11,094	13,502	8,260	2,376	2,011	--	--
White pine	154,382	2,755	10,412	13,477	17,048	19,863	19,531	22,356	15,640	11,265	19,904	2,131	--
White spruce	121,342	15,878	29,109	28,979	18,458	13,753	8,067	4,687	794	683	934	--	--
Black spruce	41,303	21,798	12,074	4,997	1,398	374	662	--	--	--	--	--	--
Balsam fir	299,183	73,349	92,651	78,048	33,786	13,161	6,815	1,171	202	--	--	--	--
Hemlock	66,348	2,235	3,607	8,606	10,822	10,689	10,704	9,439	4,757	1,735	3,457	297	--
Tamarack	59,582	21,444	20,244	10,871	4,624	1,530	572	149	148	--	--	--	--
Northern white-cedar	124,494	20,213	27,861	27,999	26,747	10,648	6,334	3,397	848	283	164	--	--
Other softwoods	325	70	--	--	255	-	--	--	--	--	--	--	--
Total	1,283,879	264,705	313,739	260,849	161,394	87,752	64,716	54,835	30,649	16,342	26,470	2,428	--
Hardwoods													
White oak	73,731	8,516	15,430	10,665	12,998	11,060	6,229	3,731	2,489	1,463	860	290	--
Select red oak	392,975	55,232	80,375	82,834	71,737	43,223	27,716	12,255	7,456	5,180	5,743	1,224	--
Other red oak	41,248	6,077	6,414	7,760	5,764	6,026	4,717	1,735	1,655	956	144	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hickory	9,803	3,438	3,438	1,004	1,623	300	--	--	--	--	--	--	--
Basswood	334,289	33,723	62,800	84,273	64,955	43,578	22,131	10,429	6,144	3,526	2,730	--	--
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	85,401	7,799	12,330	18,220	11,420	11,742	7,365	7,472	3,905	2,154	2,494	500	--
Hard maple	553,791	137,427	137,752	94,364	63,964	46,186	31,860	20,800	10,624	5,763	4,461	590	--
Soft maple	468,019	167,640	129,832	75,374	38,812	27,754	11,760	8,834	5,674	1,355	984	--	--
Elm	141,996	9,550	18,409	20,378	25,570	21,256	17,239	11,582	7,054	4,615	4,577	1,325	441
Black ash	226,230	79,965	54,974	46,231	24,082	10,637	6,231	2,491	565	774	280	--	--
White & green ash	83,849	12,661	14,617	21,267	17,461	8,889	6,390	1,804	760	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Willow	163	--	--	--	163	--	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	8,547	1,009	1,650	1,894	1,352	1,775	867	--	--	--	--	--	--
Bigtooth aspen	272,055	27,775	52,181	75,696	66,255	27,330	14,454	5,856	2,125	383	--	--	--
Quaking aspen	872,273	163,794	234,339	216,984	139,610	77,119	29,550	9,243	913	571	150	--	--
Paper birch	438,362	139,952	153,652	86,000	40,743	14,030	3,256	613	116	--	--	--	--
Black cherry	19,820	6,853	6,020	4,547	1,983	417	--	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--
Butternut	4,841	390	1,722	438	1,303	167	672	--	149	--	--	--	--
Other hardwoods	118	--	118	--	--	--	--	--	--	--	--	--	--
Total	4,027,511	861,801	986,053	847,929	589,795	351,489	190,437	96,845	49,629	26,740	22,423	3,929	441
All species	5,311,390	1,126,506	1,299,792	1,108,778	751,189	439,241	255,153	151,680	80,278	43,082	48,893	6,357	441

Table 29.--Net volume of sawtimber on commercial forest land by species group and diameter class, Northwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods											
Jack pine	403,480	249,954	122,729	25,185	4,905	707	--	--	--	--	--
Red pine	654,363	228,694	139,045	73,129	63,345	77,265	47,421	13,744	11,720	--	--
White pine	745,829	53,597	79,744	100,557	104,173	123,034	88,609	65,181	117,928	13,006	--
White spruce	368,931	129,562	89,306	69,656	42,132	25,002	4,307	3,766	5,200	--	--
Black spruce	33,543	21,305	6,748	1,932	3,558	--	--	--	--	--	--
Balsam fir	588,647	325,407	156,753	64,529	34,722	6,162	1,074	--	--	--	--
Hemlock	264,927	30,844	44,243	46,823	48,776	44,308	22,825	8,451	17,140	1,517	--
Tamarack	94,390	56,556	24,648	8,326	3,182	839	839	--	--	--	--
Northern white-cedar	388,516	137,092	135,824	55,922	33,992	18,466	4,699	1,587	934	--	--
Other softwoods	1,392	--	1,392	--	--	--	--	--	--	--	--
Total	3,544,018	1,233,011	800,432	446,059	338,785	295,783	169,774	92,729	152,922	14,523	--
Hardwoods											
White oak	202,018	--	71,146	56,793	30,959	18,359	12,067	7,094	4,182	1,418	--
Select red oak	846,693	--	347,004	207,996	134,073	59,699	36,758	25,792	29,027	6,344	--
Other red oak	100,877	--	27,871	28,781	22,584	8,329	7,953	4,649	710	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--
Other hickory	9,661	--	8,204	1,457	--	--	--	--	--	--	--
Basswood	732,985	--	305,676	207,331	106,864	51,099	30,440	17,664	13,911	--	--
Beech	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	221,270	--	45,989	53,398	35,683	37,650	20,303	11,554	13,825	2,868	--
Hard maple	905,072	--	303,019	224,611	158,854	105,822	55,156	30,363	24,002	3,245	--
Soft maple	498,562	--	218,025	143,051	57,942	42,091	26,596	6,312	4,545	--	--
Elm	411,041	--	108,790	91,191	75,615	51,747	32,069	21,321	21,632	6,462	2,214
Black ash	269,758	--	153,104	61,349	33,983	13,087	2,907	3,908	1,420	--	--
White & green ash	190,571	--	99,711	46,473	31,993	8,752	3,642	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Willow	720	--	720	--	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	17,149	--	5,481	7,717	3,951	--	--	--	--	--	--
Bigtooth aspen	530,658	--	294,954	126,268	68,581	28,454	10,477	1,924	--	--	--
Quaking aspen	1,255,261	--	653,540	387,142	155,190	50,142	5,092	3,264	891	--	--
Paper birch	293,605	--	200,194	72,013	17,366	3,379	653	--	--	--	--
Black cherry	14,138	--	11,937	2,201	--	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	13,381	--	7,964	983	3,666	--	768	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--	--	--	--
Total	6,513,420	--	2,863,329	1,718,755	937,304	478,610	244,881	133,845	114,145	20,337	2,214
All species	10,057,438	1,233,011	3,663,761	2,164,814	1,276,089	774,393	414,655	226,574	267,067	34,860	2,214

[1/] International 1/4-inch rule.

Table 30.--Net volume of growing stock on commercial forest land by species group and forest type, Northwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	237,849	188,166	3,017	1,246	--	--	--	--
Red pine	179,071	8,641	123,086	9,164	2,345	131	888	--
White pine	154,382	2,268	22,692	40,448	7,352	1,753	1,070	843
White spruce	121,342	--	994	2,249	12,982	62,477	641	2,398
Black spruce	41,303	201	--	715	4,928	367	16,194	4,200
Balsam fir	299,183	80	1,736	2,234	107,449	2,080	2,337	12,806
Hemlock	66,348	--	--	--	1,649	--	1,287	3,930
Tamarack	59,582	--	--	735	3,360	--	6,945	3,633
Northern white-cedar	124,494	--	434	--	19,044	1,036	3,080	68,665
Other softwoods	325	--	--	255	--	--	--	--
Total	1,283,879	199,356	151,959	57,046	159,109	67,844	32,442	96,475
Hardwoods								
White oak	73,731	--	--	254	77	--	--	--
Select red oak	392,975	2,289	4,356	607	239	--	430	--
Other red oak	41,248	2,988	--	258	--	--	75	--
Select hickory	--	--	--	--	--	--	--	--
Other hickory	9,803	--	--	--	--	--	--	--
Basswood	334,289	--	--	421	--	--	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	85,401	--	--	--	2,985	--	173	5,307
Hard maple	553,791	--	666	--	1,429	118	107	--
Soft maple	468,019	--	4,038	1,248	6,298	688	781	2,235
Elm	141,996	--	102	251	1,382	--	--	--
Black ash	226,230	--	--	--	9,017	174	--	6,081
White & green ash	83,849	--	118	--	116	536	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--
Willow	163	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	8,547	--	--	--	110	--	--	--
Bigtooth aspen	272,055	1,761	1,985	1,440	462	185	191	223
Quaking aspen	872,273	6,075	7,169	9,194	18,317	1,339	1,816	1,841
Paper birch	438,362	492	3,168	1,440	10,301	522	1,359	3,167
Black cherry	19,820	--	--	--	102	--	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	4,841	--	--	--	--	--	--	--
Other hardwoods	118	--	--	--	--	--	--	--
Total	4,027,511	13,605	21,602	15,113	50,835	3,562	4,932	18,854
All species	5,311,390	212,961	173,561	72,159	209,944	71,406	37,374	115,329

(Table 30 continued on next page)

(Table 30 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods								
Jack pine	331	26,701	345	573	14,798	1,574	--	1,098
Red pine	304	5,019	256	5,633	20,992	2,612	--	--
White pine	3,782	7,299	6,382	32,842	23,257	4,312	--	82
White spruce	381	--	3,592	12,736	16,638	6,053	--	201
Black spruce	5,338	--	1,521	936	4,991	1,912	--	--
Balsam fir	5,075	681	31,462	62,340	53,250	17,653	--	--
Hemlock	79	594	4,448	50,823	1,982	1,556	--	--
Tamarack	30,826	141	4,612	1,108	6,230	1,372	--	620
Northern white-cedar	369	--	12,350	15,447	3,141	928	--	--
Other softwoods	--	--	--	70	--	--	--	--
Total	46,485	40,435	64,968	182,508	145,279	37,972	--	2,001
Hardwoods								
White oak	--	36,918	4,220	14,644	15,199	2,247	--	172
Select red oak	--	191,524	5,295	110,239	59,684	18,312	--	--
Other red oak	--	25,533	1,073	2,947	7,118	1,110	--	146
Select hickory	--	--	--	--	--	--	--	--
Other hickory	--	1,209	231	8,015	348	--	--	--
Basswood	--	10,738	11,747	295,218	12,531	3,634	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	135	81	8,411	65,440	2,147	722	--	--
Hard maple	105	7,610	10,304	512,290	14,724	6,337	--	101
Soft maple	2,081	18,090	68,843	267,862	74,626	21,118	--	111
Elm	--	4,198	35,520	88,646	9,905	1,992	--	--
Black ash	--	2,542	128,134	60,272	15,452	4,139	--	419
White & green ash	--	4,708	6,120	65,671	3,796	2,784	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--
Willow	--	--	163	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	109	807	287	6,911	323	--	--
Bigtooth aspen	2,249	31,403	1,732	30,499	187,996	11,929	--	--
Quaking aspen	2,729	16,105	26,025	122,947	621,962	34,658	--	2,096
Paper birch	1,876	29,568	12,392	86,479	131,887	154,923	--	788
Black cherry	--	1,459	132	11,261	5,853	1,013	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	--	1,163	--	3,678	--	--	--	--
Other hardwoods	--	--	118	--	--	--	--	--
Total	9,175	382,958	321,267	1,746,395	1,170,139	265,241	--	3,833
All species	55,660	423,393	386,235	1,928,903	1,315,418	303,213	--	5,834

Table 31.--Net volume of sawtimber on commercial forest land by species group and forest type, Northwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	403,480	272,336	11,563	3,593	--	--	--	--
Red pine	654,363	37,574	394,811	40,923	11,212	--	5,136	--
White pine	745,829	10,136	102,375	182,169	36,804	9,288	3,585	4,042
White spruce	368,931	--	4,116	10,243	48,556	140,169	2,603	8,552
Black spruce	33,543	--	--	--	7,861	767	7,432	5,475
Balsam fir	588,647	--	4,160	9,119	208,532	3,640	3,457	5,815
Hemlock	264,927	--	--	--	5,510	--	5,191	14,600
Tamarack	94,390	--	--	840	6,750	--	3,019	5,499
Northern white-cedar	388,516	--	1,134	--	60,358	--	8,825	203,009
Other softwoods	1,392	--	--	1,392	--	--	--	--
Total	3,544,018	320,046	518,159	248,279	385,583	153,864	39,248	246,992
Hardwoods								
White oak	202,018	--	--	678	--	--	--	--
Select red oak	846,693	2,766	4,555	--	1,205	--	596	--
Other red oak	100,877	6,269	--	810	--	--	411	--
Select hickory	--	--	--	--	--	--	--	--
Other hickory	9,661	--	--	--	--	--	--	--
Basswood	732,985	--	--	853	--	--	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	221,270	--	--	--	9,037	--	481	18,603
Hard maple	905,072	--	--	--	2,380	--	--	--
Soft maple	498,562	--	--	--	6,722	2,016	--	3,077
Elm	411,041	--	--	737	4,231	--	--	--
Black ash	269,758	--	--	--	5,887	1,011	--	759
White & green ash	190,571	--	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--
Willow	720	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	17,149	--	--	--	--	--	--	--
Bigtooth aspen	530,658	--	2,246	3,252	--	--	977	565
Quaking aspen	1,255,261	2,433	7,317	16,051	34,604	4,554	3,788	3,761
Paper birch	293,605	--	4,425	687	10,342	--	590	5,138
Black cherry	14,138	--	--	--	692	--	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	13,381	--	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--
Total	6,513,420	11,468	18,543	23,068	75,100	7,581	6,843	31,903
All species	10,057,438	331,514	536,702	271,347	460,683	161,445	46,091	278,895

[1/] International 1/4-inch rule.

(Table 31 continued on next page)

(Table 31 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods								
Jack pine	--	73,548	972	2,572	31,237	6,875	--	784
Red pine	1,734	17,203	1,465	32,380	97,764	14,161	--	--
White pine	18,274	37,671	33,252	172,600	113,257	22,051	--	325
White spruce	909	--	14,693	59,917	55,376	22,736	--	1,061
Black spruce	2,436	--	4,736	2,551	1,512	773	--	--
Balsam fir	1,441	556	66,716	152,060	96,169	36,982	--	--
Hemlock	339	2,751	15,295	206,335	8,590	6,316	--	--
Tamarack	34,199	--	19,788	1,548	18,406	2,644	--	1,697
Northern white-cedar	--	--	45,066	58,188	9,850	2,086	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	59,332	131,729	201,983	688,151	432,161	114,624	--	3,867
Hardwoods								
White oak	--	110,666	14,223	44,958	25,718	5,263	--	512
Select red oak	--	370,967	16,823	335,228	79,185	35,368	--	--
Other red oak	--	51,882	4,187	12,685	20,591	3,296	--	746
Select hickory	--	--	--	--	--	--	--	--
Other hickory	--	698	--	8,963	--	--	--	--
Basswood	--	22,882	26,806	664,372	12,568	5,504	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	629	--	21,561	168,342	867	1,750	--	--
Hard maple	--	11,539	6,952	869,626	8,972	5,603	--	--
Soft maple	1,903	14,238	124,118	325,361	17,405	3,722	--	--
Elm	--	13,652	103,795	264,062	18,724	5,840	--	--
Black ash	--	4,862	169,449	76,243	7,463	4,084	--	--
White & green ash	--	8,111	16,533	160,296	2,214	3,417	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--
Willow	--	--	720	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	--	2,045	--	14,342	762	--	--
Bigtooth aspen	--	67,812	4,941	71,166	347,031	32,668	--	--
Quaking aspen	1,292	24,402	40,872	288,712	766,624	59,524	--	1,327
Paper birch	2,054	11,758	12,870	87,720	75,019	83,002	--	--
Black cherry	--	--	--	10,750	1,314	1,382	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	--	5,034	--	8,347	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--
Total	5,878	718,503	565,895	3,396,831	1,398,037	251,185	--	2,585
All species	65,210	850,232	767,878	4,084,982	1,830,198	365,809	--	6,452

Table 32.--Net volume of growing stock on commercial forest land by species group and ownership class, Northwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All owners	Ownership class								
		National Forest	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Softwoods										
Jack pine	237,849	58,221	495	7,604	59,696	292	40,363	12,187	8,540	50,451
Red pine	179,071	63,164	--	2,453	37,691	13,578	13,003	6,315	11,455	31,412
White pine	154,382	26,363	--	3,826	24,597	18,100	14,936	6,862	9,636	50,062
White spruce	121,342	59,745	--	5,340	16,868	72	10,021	4,211	5,632	19,453
Black spruce	41,303	6,853	--	371	8,832	372	5,532	1,587	833	16,923
Balsam fir	299,183	30,638	--	11,429	82,217	11,126	29,985	15,637	13,179	104,972
Hemlock	66,348	18,169	--	1,675	10,356	6,128	9,761	1,458	4,557	14,244
Tamarack	59,582	7,040	293	3,728	7,289	--	5,195	2,844	3,002	30,191
Northern white-cedar	124,494	33,676	--	3,569	25,447	5,103	15,245	1,805	5,806	33,843
Other softwoods	325	--	--	--	--	--	--	--	--	325
Total	1,283,879	303,869	788	39,995	272,993	54,771	144,041	52,906	62,640	351,876
Hardwoods										
White oak	73,731	2,824	198	1,800	5,503	331	1,634	18,474	3,289	39,678
Select red oak	392,975	82,873	251	7,312	72,463	6,814	24,492	46,322	15,128	137,320
Other red oak	41,248	104	--	2,772	9,402	163	3,679	6,464	1,102	17,562
Select hickory	--	--	--	--	--	--	--	--	--	--
Other hickory	9,803	1,206	--	117	1,705	--	303	798	--	5,674
Basswood	334,289	40,196	213	9,318	83,543	8,703	40,816	19,410	13,857	118,233
Beech	--	--	--	--	--	--	--	--	--	--
Yellow birch	85,401	24,891	--	1,264	17,390	2,557	13,606	1,574	6,240	17,879
Hard maple	553,791	104,510	102	14,123	110,333	10,237	66,581	30,151	35,870	181,884
Soft maple	468,019	80,132	344	10,905	92,152	7,326	45,852	43,465	18,776	169,067
Elm	141,996	4,580	180	6,671	29,949	843	16,668	16,180	8,728	58,197
Black ash	226,230	23,103	735	9,136	60,721	740	25,673	15,867	8,459	81,796
White & green ash	83,849	10,379	310	2,034	14,247	334	12,500	8,104	4,021	31,920
Sycamore	--	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--
Willow	163	--	--	--	--	--	--	163	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--
Balsam poplar	8,547	--	--	345	3,689	--	809	697	964	2,043
Bigtooth aspen	272,055	60,729	--	9,870	36,314	12,599	8,737	28,902	10,821	104,083
Quaking aspen	872,273	69,710	1,239	22,267	189,432	28,391	59,574	101,573	46,052	354,035
Paper birch	438,362	54,556	1,290	14,481	94,299	13,719	35,871	34,858	31,593	157,695
Black cherry	19,820	--	--	915	5,299	--	996	2,032	830	9,748
Black walnut	--	--	--	--	--	--	--	--	--	--
Butternut	4,841	--	--	--	357	261	661	--	544	3,018
Other hardwoods	118	--	--	--	--	--	--	--	--	118
Total	4,027,511	559,793	4,862	113,330	826,798	93,018	358,452	375,034	206,274	1,489,950
All species	5,311,390	863,662	5,650	153,325	1,099,791	147,789	502,493	427,940	268,914	1,841,826

Table 33.--Net volume of sawtimber on commercial forest land by species group and ownership class, Northwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All owners	Ownership class: National Forest	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Softwoods										
Jack pine	403,480	88,089	--	19,775	80,300	1,513	53,463	21,013	33,158	106,169
Red pine	654,363	225,859	--	6,451	103,774	63,228	61,627	24,339	35,197	133,888
White pine	745,829	117,868	--	19,917	119,771	89,945	68,029	33,937	51,797	244,565
White spruce	368,931	130,454	--	18,124	75,085	--	40,144	15,515	19,177	70,432
Black spruce	33,543	6,199	--	640	7,747	1,069	780	3,113	2,288	11,707
Balsam fir	588,647	60,007	--	16,519	175,188	18,763	72,173	27,394	19,332	199,271
Hemlock	264,927	73,442	--	7,420	43,620	24,308	41,447	5,287	18,134	51,269
Tamarack	94,390	1,937	1,567	14,752	12,726	--	8,698	9,746	6,027	38,937
Northern white-cedar	388,516	88,327	--	11,086	99,451	18,682	57,105	2,542	17,140	94,183
Other softwoods	1,392	--	--	--	--	--	--	--	--	1,392
Total	3,544,018	792,182	1,567	114,684	717,662	217,508	403,466	142,886	202,250	951,813
Hardwoods										
White oak	202,018	--	--	5,345	11,688	728	3,614	59,045	9,095	112,503
Select red oak	846,693	105,776	1,231	14,665	132,026	21,199	54,403	126,913	42,856	347,624
Other red oak	100,877	--	--	6,959	15,980	769	7,490	26,943	2,303	40,433
Select hickory	--	--	--	--	--	--	--	--	--	--
Other hickory	9,661	2,550	--	--	767	--	--	745	--	5,599
Basswood	732,985	100,538	--	18,641	159,888	25,200	90,581	61,647	32,267	244,223
Beech	--	--	--	--	--	--	--	--	--	--
Yellow birch	221,270	48,759	--	3,741	55,159	9,701	42,326	4,100	18,862	38,622
Hard maple	905,072	123,842	--	31,715	170,816	27,592	100,293	63,594	63,373	323,847
Soft maple	498,562	115,418	--	11,686	110,967	10,514	49,072	43,720	13,567	143,618
Elm	411,041	13,228	--	18,436	82,069	2,381	48,249	47,367	24,913	174,398
Black ash	269,758	20,875	967	10,638	85,106	804	35,730	16,229	11,179	88,230
White & green ash	190,571	27,985	--	7,281	25,756	1,862	34,882	16,492	7,838	68,475
Sycamore	--	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--
Willow	720	--	--	--	--	--	--	720	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--
Balsam poplar	17,149	--	--	--	11,127	--	1,905	1,079	1,373	1,665
Bigtooth aspen	530,658	89,775	--	25,054	56,482	25,991	22,483	63,733	32,905	214,235
Quaking aspen	1,255,261	78,554	2,666	34,094	290,924	59,412	78,262	123,596	71,214	516,539
Paper birch	293,605	31,205	--	8,657	57,578	13,184	24,861	19,724	23,727	114,669
Black cherry	14,138	--	--	692	3,928	--	1,524	--	1,085	6,909
Black walnut	--	--	--	--	--	--	--	--	--	--
Butternut	13,381	--	--	--	996	--	3,088	--	2,209	7,088
Other hardwoods	--	--	--	--	--	--	--	--	--	--
Total	6,513,420	758,505	4,864	197,604	1,271,257	199,337	598,763	675,647	358,766	2,448,677
All species	10,057,438	1,550,687	6,431	312,288	1,988,919	416,845	1,002,229	818,533	561,016	3,400,490

[1/] International 1/4-inch rule.

Table 34.--Net volume of growing stock on commercial forest land by forest type and stand-age class, Northwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Forest type	All ages	Stand-age class (years)												
		1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	212,961	3,279	5,982	17,004	46,460	99,933	28,719	3,850	4,836	2,898	--	--	--	--
Red pine	173,561	--	7,450	10,669	43,695	53,233	28,701	2,017	11,792	10,508	5,496	--	--	--
White pine	72,159	--	--	--	--	5,663	8,562	21,528	26,574	5,697	--	4,135	--	--
Balsam fir	209,944	5,498	7,315	15,372	15,948	37,916	59,423	44,570	2,698	9,280	1,991	7,177	2,756	--
White spruce	71,406	--	--	18,454	39,023	7,812	--	6,117	--	--	--	--	--	--
Black spruce	37,374	2,347	2,299	5,572	6,376	5,963	3,039	1,109	5,995	4,674	--	--	--	--
Northern white-cedar	115,329	--	--	2,096	30	21,030	4,537	15,468	8,771	14,447	14,573	4,605	10,010	19,762
Tamarack	55,660	2,441	6,877	4,619	3,417	14,287	5,130	851	8,305	5,569	--	1,712	1,474	978
Oak-hickory	423,393	16,949	6,668	2,887	15,342	64,735	160,048	40,818	45,659	28,228	15,400	24,869	1,790	--
Elm-ash-soft maple	386,235	4,082	11,608	19,624	34,013	52,394	56,783	50,645	42,016	28,366	31,195	27,948	18,439	9,122
Maple-birch	1,928,903	32,792	37,940	55,864	102,391	392,209	470,975	334,655	148,479	116,627	76,367	70,367	48,190	42,047
Aspen	1,315,418	58,943	62,678	78,947	229,926	444,686	274,318	116,616	36,634	12,670	--	--	--	--
Paper birch	303,213	5,980	9,710	15,476	42,455	100,035	71,450	46,636	6,782	2,039	--	2,650	--	--
Exotic	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	5,834	5,834	--	--	--	--	--	--	--	--	--	--	--	--
All types	5,311,390	138,145	158,527	246,584	579,076	1,299,896	1,171,685	684,880	348,541	241,003	145,022	143,463	82,659	71,909

Table 35.--Net volume of sawtimber on commercial forest land by forest type and stand-age class, Northwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Forest type	All ages	Stand-age class (years)												
		1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	331,514	9,728	4,834	16,172	37,166	159,884	57,678	14,011	18,329	13,712	--	--	--	--
Red pine	536,702	--	6,660	2,966	97,711	194,825	105,904	10,381	53,894	46,610	17,751	--	--	--
White pine	271,347	--	--	--	--	12,067	24,245	71,790	118,847	25,767	--	18,631	--	--
Balsam fir	460,683	11,718	13,455	20,814	28,989	60,839	149,497	97,779	8,223	28,972	5,857	24,985	9,555	--
White spruce	161,445	--	--	13,869	106,946	13,772	--	26,858	--	--	--	--	--	--
Black spruce	46,091	1,366	1,975	7,715	6,639	1,646	1,180	--	14,940	10,630	--	--	--	--
Northern white-cedar	278,895	--	--	2,945	--	35,653	6,930	28,023	17,832	29,295	48,457	19,268	26,476	64,016
Tamarack	65,210	2,128	7,741	2,790	3,093	10,215	1,151	--	18,499	11,578	--	2,597	4,509	909
Oak-hickory	850,232	37,386	9,667	1,361	24,177	82,562	244,482	83,345	120,072	96,452	61,915	81,983	6,830	--
Elm-ash-soft maple	767,878	6,661	24,696	16,206	37,815	78,418	97,250	112,004	87,319	65,314	80,751	73,799	52,890	34,755
Maple-birch	4,084,982	54,001	55,582	70,804	133,078	558,761	867,737	742,922	404,091	343,492	253,769	250,125	181,661	168,959
Aspen	1,830,198	118,113	73,399	73,345	216,198	489,318	451,266	250,813	114,467	43,279	--	--	--	--
Paper birch	365,809	8,108	5,769	5,099	40,319	106,244	96,934	77,779	10,149	6,901	--	8,507	--	--
Exotic	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	6,452	6,452	--	--	--	--	--	--	--	--	--	--	--	--
All types	10,057,438	255,661	203,778	234,086	732,131	1,804,204	2,104,254	1,515,705	986,662	722,002	468,500	479,895	281,921	268,639

[1/] International 1/4-inch rule.

Table 36.--Net volume of growing stock on commercial forest land by forest type, stand-size class, and basal-area class, Northwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Forest type and stand-size class	All classes	Basal-area class (square feet per acre)						
		0-10	11-20	21-30	31-40	41-50	51-60	61-70
Jack pine								
Sawtimber	41,543	--	--	--	786	877	1,738	4,630
Poletimber	155,658	--	--	--	1,044	1,622	5,628	6,085
Sapling & seedling	15,760	84	--	1,095	1,878	1,401	2,002	206
All stands	212,961	84	--	1,095	3,708	3,900	9,368	10,921
Red pine								
Sawtimber	119,795	--	--	--	677	2,017	1,542	--
Poletimber	47,785	--	--	--	--	--	1,389	--
Sapling & seedling	5,981	--	--	243	1,043	--	1,519	--
All stands	173,561	--	--	243	1,720	2,017	4,450	--
White pine								
Sawtimber	63,856	--	--	--	1,023	--	895	--
Poletimber	8,303	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	72,159	--	--	--	1,023	--	895	--
Balsam fir								
Sawtimber	91,780	--	--	--	--	2,750	13,186	1,727
Poletimber	98,005	--	--	691	--	--	6,688	11,121
Sapling & seedling	20,159	--	486	1,157	443	1,724	1,946	3,788
All stands	209,944	--	486	1,848	443	4,474	21,820	16,636
White spruce								
Sawtimber	45,810	--	--	--	--	--	--	--
Poletimber	25,097	--	--	--	--	--	--	--
Sapling & seedling	499	--	--	--	--	--	499	--
All stands	71,406	--	--	--	--	--	499	--
Black spruce								
Sawtimber	2,813	--	--	--	--	--	--	--
Poletimber	21,143	--	--	--	--	--	2,048	1,358
Sapling & seedling	13,418	--	132	1,406	492	5,039	906	1,378
All stands	37,374	--	132	1,406	492	5,039	2,954	2,736
Northern white-cedar								
Sawtimber	60,374	--	--	--	--	--	304	2,045
Poletimber	52,829	--	--	--	--	--	1,710	--
Sapling & seedling	2,126	--	30	--	--	--	1,441	--
All stands	115,329	--	30	--	--	--	3,455	2,045

(Table 36 continued on next page)

(Table 36 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine							
Sawtimber	8,439	6,130	1,165	14,323	3,455	--	--
Poletimber	18,545	14,098	66,258	32,024	7,177	3,177	--
Sapling & seedling	7,521	1,573	--	--	--	--	--
All stands	34,505	21,801	67,423	46,347	10,632	3,177	--
Red pine							
Sawtimber	--	1,415	5,433	35,737	27,785	38,609	6,580
Poletimber	625	4,644	5,991	10,689	11,485	12,962	--
Sapling & seedling	2,171	--	--	1,005	--	--	--
All stands	2,796	6,059	11,424	47,431	39,270	51,571	6,580
White pine							
Sawtimber	--	2,313	--	20,605	18,125	20,895	--
Poletimber	--	2,619	--	3,270	2,414	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	4,932	--	23,875	20,539	20,895	--
Balsam fir							
Sawtimber	5,768	4,090	2,924	19,908	32,253	6,338	2,836
Poletimber	1,159	11,208	5,044	12,142	20,789	23,490	5,673
Sapling & seedling	5,793	1,213	2,237	--	--	1,372	--
All stands	12,720	16,511	10,205	32,050	53,042	31,200	8,509
White spruce							
Sawtimber	--	--	--	--	--	10,657	35,153
Poletimber	--	--	--	--	17,955	7,142	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	17,955	17,799	35,153
Black spruce							
Sawtimber	--	--	--	--	2,813	--	--
Poletimber	6,787	1,213	1,861	1,405	6,471	--	--
Sapling & seedling	856	1,784	415	--	1,010	--	--
All stands	7,643	2,997	2,276	1,405	10,294	--	--
Northern white-cedar							
Sawtimber	2,866	1,529	2,748	--	18,270	13,014	19,598
Poletimber	1,078	4,304	--	29,429	8,371	7,937	--
Sapling & seedling	--	--	--	--	--	655	--
All stands	3,944	5,833	2,748	29,429	26,641	21,606	19,598

(Table 36 continued on next page)

(Table 36 continued)

Forest type and stand-size class	All classes	Basal-area class (square feet per acre) 0-10	11-20	21-30	31-40	41-50	51-60	61-70
Tamarack								
Sawtimber	8,936	--	380	--	--	1,089	1,121	1,474
Poletimber	30,768	--	--	430	--	2,405	2,829	8,983
Sapling & seedling	15,956	93	218	1,947	1,627	1,063	4,247	1,009
All stands	55,660	93	598	2,377	1,627	4,557	8,197	11,466
Oak-hickory								
Sawtimber	150,915	--	--	--	2,248	1,579	960	10,350
Poletimber	245,974	--	--	556	--	444	2,267	5,139
Sapling & seedling	26,504	272	1,087	2,195	7,339	9,828	2,655	--
All stands	423,393	272	1,087	2,751	9,587	11,851	5,882	15,489
Elm-ash-soft maple								
Sawtimber	131,670	--	624	1,353	1,970	1,204	8,010	2,501
Poletimber	224,186	--	--	704	1,743	6,881	9,420	12,034
Sapling & seedling	30,379	213	336	3,706	1,719	5,627	6,443	1,877
All stands	386,235	213	960	5,763	5,432	13,712	23,873	16,412
Maple-birch								
Sawtimber	739,515	--	--	546	930	--	4,830	11,592
Poletimber	1,094,515	--	--	--	1,743	6,223	12,031	19,791
Sapling & seedling	94,873	173	1,160	3,862	4,151	12,855	14,199	14,650
All stands	1,928,903	173	1,160	4,408	6,824	19,078	31,060	46,033
Aspen								
Sawtimber	233,445	--	--	2,436	3,503	6,633	9,320	14,573
Poletimber	923,535	--	226	4,961	8,769	24,485	57,638	54,494
Sapling & seedling	158,438	1,237	7,351	16,229	19,974	27,159	23,431	15,656
All stands	1,315,418	1,237	7,577	23,626	32,246	58,277	90,389	84,723
Paper birch								
Sawtimber	33,319	--	--	--	--	1,091	--	--
Poletimber	247,256	--	--	680	3,028	1,701	19,926	5,019
Sapling & seedling	22,638	--	--	864	1,429	4,815	3,826	3,875
All stands	303,213	--	--	1,544	4,457	7,607	23,752	8,894
Exotic								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Nonstocked	5,834	902	914	303	1,144	316	1,315	829
All types								
Sawtimber	1,723,771	--	1,004	4,335	11,137	17,240	41,906	48,892
Poletimber	3,175,054	--	226	8,022	16,327	43,761	121,574	124,024
Sapling & seedling	406,731	2,072	10,800	32,704	40,095	69,511	63,114	42,439
Nonstocked	5,834	902	914	303	1,144	316	1,315	829
All stands	5,311,390	2,974	12,944	45,364	68,703	130,828	227,909	216,184

(Table 36 continued on next page)

(Table 36 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack							
Sawtimber	--	--	--	4,872	--	--	--
Poletimber	--	6,966	1,712	6,232	1,211	--	--
Sapling & seedling	2,495	890	2,367	-	--	--	--
All stands	2,495	7,856	4,079	11,104	1,211	--	--
Oak-hickory							
Sawtimber	1,338	16,738	7,532	50,835	50,961	8,374	--
Poletimber	12,223	27,504	29,420	85,087	34,424	48,910	--
Sapling & seedling	1,148	1,909	--	71	--	--	--
All stands	14,709	46,151	36,952	135,993	85,385	57,284	--
Elm-ash-soft maple							
Sawtimber	655	12,734	1,628	26,131	53,547	21,313	--
Poletimber	28,623	37,360	31,710	27,478	49,611	16,020	2,602
Sapling & seedling	2,021	5,136	2,510	-	791	--	--
All stands	31,299	55,230	35,848	53,609	103,949	37,333	2,602
Maple-birch							
Sawtimber	25,494	41,149	49,778	142,535	265,907	163,237	33,517
Poletimber	56,290	103,865	87,240	311,259	343,847	144,685	7,541
Sapling & seedling	9,782	8,840	5,165	17,175	1,391	1,470	--
All stands	91,566	153,854	142,183	470,969	611,145	309,392	41,058
Aspen							
Sawtimber	16,886	27,706	14,360	30,371	92,679	14,978	--
Poletimber	70,768	131,078	84,656	171,083	228,357	74,631	12,389
Sapling & seedling	23,919	13,740	1,913	5,867	1,962	--	--
All stands	111,573	172,524	100,929	207,321	322,998	89,609	12,389
Paper birch							
Sawtimber	3,097	1,015	1,461	9,412	13,824	3,419	--
Poletimber	8,854	13,535	23,921	46,216	86,225	30,255	7,896
Sapling & seedling	846	1,690	2,549	2,744	--	--	--
All stands	12,797	16,240	27,931	58,372	100,049	33,674	7,896
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Nonstocked	--	--	111	--	--	--	--
All types							
Sawtimber	64,543	114,819	87,029	354,729	579,619	300,834	97,684
Poletimber	204,952	358,394	337,813	736,314	818,337	369,209	36,101
Sapling & seedling	56,552	36,775	17,156	26,862	5,154	3,497	--
Nonstocked	--	--	111	--	--	--	--
All stands	326,047	509,988	442,109	1,117,905	1,403,110	673,540	133,785

Table 37.--Net volume of sawtimber on commercial forest land by forest type, stand-size class, and basal-area class, Northwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Forest type and stand-size class	All classes	Basal-area class (square feet per acre)						
		0-10	11-20	21-30	31-40	41-50	51-60	61-70
Jack pine								
Sawtimber	141,457	--	--	--	2,541	3,055	5,994	15,914
Poletimber	166,226	--	--	--	1,933	--	4,517	8,650
Sapling & seedling	23,831	--	--	1,419	3,288	4,935	4,572	--
All stands	331,514	--	--	1,419	7,762	7,990	15,083	24,564
Red pine								
Sawtimber	465,264	--	--	--	3,201	10,381	8,288	--
Poletimber	64,872	--	--	--	--	--	4,906	--
Sapling & seedling	6,566	--	--	--	5,045	--	--	--
All stands	536,702	--	--	--	8,246	10,381	13,194	--
White pine								
Sawtimber	252,829	--	--	--	5,132	--	2,742	--
Poletimber	18,518	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	271,347	--	--	--	5,132	--	2,742	--
Balsam fir								
Sawtimber	288,747	--	--	--	--	8,050	50,349	5,687
Poletimber	135,810	--	--	1,114	--	--	13,103	8,158
Sapling & seedling	36,126	--	--	2,233	776	5,610	4,454	5,747
All stands	460,683	--	--	3,347	776	13,660	67,906	19,592
White spruce								
Sawtimber	135,936	--	--	--	--	--	--	--
Poletimber	25,509	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	161,445	--	--	--	--	--	--	--
Black spruce								
Sawtimber	8,000	--	--	--	--	--	--	--
Poletimber	26,032	--	--	--	--	--	1,180	1,646
Sapling & seedling	12,059	--	--	1,344	--	6,416	2,197	503
All stands	46,091	--	--	1,344	--	6,416	3,377	2,149
Northern white-cedar								
Sawtimber	191,554	--	--	--	--	--	1,077	8,423
Poletimber	84,396	--	--	--	--	--	899	--
Sapling & seedling	2,945	--	--	--	--	--	1,621	--
All stands	278,895	--	--	--	--	--	3,597	8,423

[1/] International 1/4-inch rule.

(Table 37 continued on next page)

(Table 37 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine							
Sawtimber	30,576	24,372	4,426	48,596	5,983	--	--
Poletimber	9,785	14,948	78,489	46,089	1,815	--	--
Sapling & seedling	8,408	1,209	--	--	--	--	--
All stands	48,769	40,529	82,915	94,685	7,798	--	--
Red pine							
Sawtimber	--	4,016	29,716	118,325	120,601	147,447	23,289
Poletimber	993	6,725	3,284	18,338	14,841	15,785	--
Sapling & seedling	775	--	--	746	--	--	--
All stands	1,768	10,741	33,000	137,409	135,442	163,232	23,289
White pine							
Sawtimber	--	8,463	--	77,080	77,290	82,122	--
Poletimber	--	7,007	--	8,290	3,221	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	15,470	--	85,370	80,511	82,122	--
Balsam fir							
Sawtimber	20,971	11,910	7,938	63,120	96,790	18,028	5,904
Poletimber	2,037	21,166	6,207	14,001	34,075	30,635	5,314
Sapling & seedling	6,710	2,830	4,247	--	--	3,519	--
All stands	29,718	35,906	18,392	77,121	130,865	52,182	11,218
White spruce							
Sawtimber	--	--	--	--	--	37,464	98,472
Poletimber	--	--	--	--	13,869	11,640	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	13,869	49,104	98,472
Black spruce							
Sawtimber	--	--	--	--	8,000	--	--
Poletimber	6,388	2,294	2,630	2,603	9,291	--	--
Sapling & seedling	--	1,599	--	--	--	--	--
All stands	6,388	3,893	2,630	2,603	17,291	--	--
Northern white-cedar							
Sawtimber	11,612	5,447	11,505	--	55,107	42,410	55,973
Poletimber	1,182	6,861	--	49,510	12,519	13,425	--
Sapling & seedling	--	--	--	--	--	1,324	--
All stands	12,794	12,308	11,505	49,510	67,626	57,159	55,973

(Table 37 continued on next page)

(Table 37 continued)

Forest type and stand-size class	All classes	Basal-area class (square feet per acre) 0-10	11-20	21-30	31-40	41-50	51-60	61-70
Tamarack								
Sawtimber	28,640	--	1,439	--	--	4,586	3,130	4,509
Poletimber	21,591	--	--	--	--	2,204	1,460	1,212
Sapling & seedling	14,979	--	--	1,557	4,225	440	2,958	2,320
All stands	65,210	--	1,439	1,557	4,225	7,230	7,548	8,041
Oak-hickory								
Sawtimber	483,658	--	--	--	9,932	8,215	4,539	43,798
Poletimber	318,160	--	--	--	--	839	1,855	7,399
Sapling & seedling	48,414	--	702	5,370	17,428	15,497	4,410	--
All stands	850,232	--	702	5,370	27,360	24,551	10,804	51,197
Elm-ash-soft maple								
Sawtimber	413,334	--	3,394	5,101	7,158	3,115	29,541	8,276
Poletimber	311,211	--	--	--	3,500	10,092	14,703	5,841
Sapling & seedling	43,333	--	625	12,326	6,686	5,299	8,997	--
All stands	767,878	--	4,019	17,427	17,344	18,506	53,241	14,117
Maple-birch								
Sawtimber	2,358,137	--	--	1,833	3,636	--	18,003	38,485
Poletimber	1,584,330	--	--	--	2,976	8,594	9,292	25,100
Sapling & seedling	142,515	--	2,485	6,224	6,234	25,855	22,952	15,698
All stands	4,084,982	--	2,485	8,057	12,846	34,449	50,247	79,283
Aspen								
Sawtimber	691,033	--	--	8,390	11,743	17,878	29,107	47,832
Poletimber	918,332	--	--	4,620	7,919	20,988	34,706	39,950
Sapling & seedling	220,833	3,097	21,817	30,114	25,141	34,467	35,063	23,272
All stands	1,830,198	3,097	21,817	43,124	44,803	73,333	98,876	111,054
Paper birch								
Sawtimber	96,652	--	--	--	--	2,860	--	--
Poletimber	251,514	--	--	--	2,808	886	6,302	12,214
Sapling & seedling	17,643	--	--	1,183	686	702	4,761	2,645
All stands	365,809	--	--	1,183	3,494	4,448	11,063	14,859
Exotic								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Nonstocked	6,452	2,177	1,141	1,061	577	750	--	746
All types								
Sawtimber	5,555,241	--	4,833	15,324	43,343	58,140	152,770	172,924
Poletimber	3,926,501	--	--	5,734	19,136	43,603	92,923	110,170
Sapling & seedling	569,244	3,097	25,629	61,770	69,509	99,221	91,985	50,185
Nonstocked	6,452	2,177	1,141	1,061	577	750	--	746
All stands	10,057,438	5,274	31,603	83,889	132,565	201,714	337,678	334,025

(Table 37 continued on next page)

(Table 37 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack							
Sawtimber	--	--	--	14,976	--	--	--
Poletimber	--	8,716	2,597	4,047	1,355	--	--
Sapling & seedling	--	2,187	1,292	--	--	--	--
All stands	--	10,903	3,889	19,023	1,355	--	--
Oak-hickory							
Sawtimber	5,082	48,235	30,762	165,000	146,124	21,971	--
Poletimber	15,752	43,507	34,539	96,907	51,419	65,943	--
Sapling & seedling	874	4,133	--	--	--	--	--
All stands	21,708	95,875	65,301	261,907	197,543	87,914	--
Elm-ash-soft maple							
Sawtimber	2,449	30,549	6,903	89,989	167,142	59,717	--
Poletimber	41,791	65,170	44,126	33,097	64,801	25,634	2,456
Sapling & seedling	470	4,363	2,528	--	2,039	--	--
All stands	44,710	100,082	53,557	123,086	233,982	85,351	2,456
Maple-birch							
Sawtimber	86,388	149,970	152,789	483,828	810,293	521,255	91,657
Poletimber	67,128	164,647	141,652	430,225	545,848	180,769	8,099
Sapling & seedling	8,465	18,701	6,673	24,593	2,261	2,374	--
All stands	161,981	333,318	301,114	938,646	1,358,402	704,398	99,756
Aspen							
Sawtimber	54,243	87,052	44,684	84,517	266,707	38,880	--
Poletimber	75,123	153,227	88,477	191,003	230,011	68,307	4,001
Sapling & seedling	28,839	7,817	826	9,284	1,096	--	--
All stands	158,205	248,096	133,987	284,804	497,814	107,187	4,001
Paper birch							
Sawtimber	10,197	3,134	3,816	28,902	36,599	11,144	--
Poletimber	10,540	13,545	29,739	50,788	83,289	33,464	7,939
Sapling & seedling	--	2,402	613	4,651	--	--	--
All stands	20,737	19,081	34,168	84,341	119,888	44,608	7,939
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Nonstocked	--	--	--	--	--	--	--
All types							
Sawtimber	221,518	373,148	292,539	1,174,333	1,790,636	980,438	275,295
Poletimber	230,719	507,813	431,740	944,898	1,066,354	445,602	27,809
Sapling & seedling	54,541	45,241	16,179	39,274	5,396	7,217	--
Nonstocked	--	--	--	--	--	--	--
All stands	506,778	926,202	740,458	2,158,505	2,862,386	1,433,257	303,104

Table 38.--Net volume of sawtimber on commercial forest land by species group and butt log grade, Northwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All grades	Log grade 1	2	3	Tie and timber
Softwoods					
Jack pine	403,480	--	--	403,480	--
Red pine	654,363	--	12,177	642,186	--
White pine	745,829	91,585	91,626	558,760	3,858
White spruce	368,931	2,898	2,355	363,678	--
Black spruce	33,543	--	--	33,543	--
Balsam fir	588,647	--	--	588,647	--
Hemlock	264,927	25,025	43,812	196,090	--
Tamarack	94,390	--	772	93,618	--
Northern white-cedar	388,516	--	22,430	366,086	--
Other softwoods	1,392	--	--	1,392	--
Total	3,544,018	119,508	173,172	3,247,480	3,858
Hardwoods					
White oak	202,018	9,651	33,206	139,673	19,488
Select red oak	846,693	76,618	215,878	491,026	63,171
Other red oak	100,877	--	21,007	79,870	--
Select hickory	--	--	--	--	--
Other hickory	9,661	--	--	6,744	2,917
Basswood	732,985	103,824	208,227	403,761	17,173
Beech	--	--	--	--	--
Yellow birch	221,270	30,969	76,696	110,771	2,834
Hard maple	905,072	84,792	158,329	645,155	16,796
Soft maple	498,562	40,366	68,819	367,283	22,094
Elm	411,041	47,725	136,983	216,311	10,022
Black ash	269,758	18,605	63,966	178,843	8,344
White & green ash	190,571	23,062	66,534	100,975	--
Sycamore	--	--	--	--	--
Cottonwood	--	--	--	--	--
Willow	720	--	328	392	--
Hackberry	--	--	--	--	--
Balsam poplar	17,149	--	7,824	9,325	--
Bigtooth aspen	530,658	12,250	74,590	437,892	5,926
Quaking aspen	1,255,261	30,439	153,541	968,392	102,889
Paper birch	293,605	--	30,465	249,615	13,525
Black cherry	14,138	--	7,592	6,546	--
Black walnut	--	--	--	--	--
Butternut	13,381	--	6,966	6,415	--
Other hardwoods	--	--	--	--	--
Total	6,513,420	478,301	1,330,951	4,418,989	285,179
All species	10,057,438	597,809	1,504,123	7,666,469	289,037

[1/] International 1/4-inch rule.

Table 39.--Net volume of short-log trees on commercial forest land by species group and diameter class, Northwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods											
Jack pine	3,594	866	230	2,498	--	--	--	--	--	--	--
Red pine	71	71	--	--	--	--	--	--	--	--	--
White pine	2,863	--	114	734	--	--	368	--	1,085	562	--
White spruce	441	--	441	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--
Balsam fir	899	632	--	267	--	--	--	--	--	--	--
Hemlock	2,768	492	287	722	111	364	650	--	--	142	--
Tamarack	429	--	222	207	--	--	--	--	--	--	--
Northern white-cedar	3,026	1,408	975	429	107	107	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	14,091	3,469	2,269	4,857	218	471	1,018	--	1,085	704	--
Hardwoods											
White oak	5,502	--	103	1,910	1,137	667	903	661	121	--	--
Select red oak	10,730	--	2,369	2,192	1,858	1,998	956	569	788	--	--
Other red oak	5,342	--	391	1,281	1,270	567	498	852	483	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--
Other hickory	671	--	671	--	--	--	--	--	--	--	--
Basswood	4,761	--	1,421	1,214	943	597	--	418	168	--	--
Beech	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	5,114	--	1,193	1,039	1,217	674	120	--	871	--	--
Hard maple	15,623	--	1,989	4,960	4,002	1,439	1,083	583	1,567	--	--
Soft maple	7,280	--	1,494	2,370	1,305	1,317	134	507	153	--	--
Elm	7,441	--	1,493	1,729	1,441	1,191	293	109	745	440	--
Black ash	695	--	411	284	--	--	--	--	--	--	--
White & green ash	1,353	--	429	784	140	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Willow	--	--	--	--	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	2,826	--	1,579	759	183	305	--	--	--	--	--
Quaking aspen	7,700	--	3,830	3,177	354	229	110	--	--	--	--
Paper birch	3,439	--	1,545	1,214	569	--	--	111	--	--	--
Black cherry	102	--	102	--	--	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--	--	--	--
Total	78,579	--	19,020	22,913	14,419	8,984	4,097	3,810	4,896	440	--
All species	92,670	3,469	21,289	27,770	14,637	9,455	5,115	3,810	5,981	1,144	--

Table 40.--Net volume of short-log trees on commercial forest land by species group and diameter class, Northwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All classes	Diameter class (inches at breast height) 9.0 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 22.9	23.0- 28.9	29.0- 38.9	39.0+
Softwoods											
Jack pine	12,507	3,082	797	8,628	--	--	--	--	--	--	--
Red pine	298	298	--	--	--	--	--	--	--	--	--
White pine	10,605	--	352	2,396	--	--	1,375	--	4,233	2,249	--
White spruce	1,957	--	1,957	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--
Balsam fir	2,214	1,462	--	752	--	--	--	--	--	--	--
Hemlock	6,709	948	651	1,739	282	953	1,734	--	--	402	--
Tamarack	1,854	--	949	905	--	--	--	--	--	--	--
Northern white-cedar	10,302	4,612	3,385	1,516	387	402	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	46,446	10,402	8,091	15,936	669	1,355	3,109	--	4,233	2,651	--
Hardwoods											
White oak	14,269	--	301	5,077	2,950	1,689	2,283	1,665	304	--	--
Select red oak	23,757	--	5,190	4,820	4,086	4,439	2,130	1,283	1,809	--	--
Other red oak	12,238	--	911	2,893	2,906	1,284	1,149	1,966	1,129	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--
Other hickory	1,835	--	1,835	--	--	--	--	--	--	--	--
Basswood	10,143	--	2,955	2,561	2,033	1,300	--	917	377	--	--
Beech	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	11,940	--	2,487	2,261	2,885	1,662	304	--	2,341	--	--
Hard maple	37,639	--	4,608	11,638	9,630	3,511	2,714	1,481	4,057	--	--
Soft maple	20,151	--	4,568	6,717	3,486	3,369	345	1,286	380	--	--
Elm	18,840	--	3,672	4,255	3,617	3,026	761	295	2,002	1,212	--
Black ash	2,112	--	1,319	793	--	--	--	--	--	--	--
White & green ash	3,263	--	1,075	1,873	315	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Willow	--	--	--	--	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	4,504	--	2,469	1,216	303	516	--	--	--	--	--
Quaking aspen	17,015	--	8,167	7,165	843	564	276	--	--	--	--
Paper birch	9,378	--	4,198	3,259	1,590	--	--	331	--	--	--
Black cherry	312	--	312	--	--	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--	--	--	--
Total	187,396	--	44,067	54,528	34,644	21,360	9,962	9,224	12,399	1,212	--
All species	233,842	10,402	52,158	70,464	35,313	22,715	13,071	9,224	16,632	3,863	--

[1/] International 1/4-inch rule.

Table 41.--Net annual growth of growing stock on commercial forest land by softwoods and hardwoods, Northwest Unit, Wisconsin, 1967 and 1982

(In thousand cubic feet)

Species	1967[1/]	1982
Softwoods	43,000	49,537
Hardwoods	118,000	129,690
All species	161,000	179,227

[1/] Figures have been adjusted from those published after the 1968 survey to conform to 1982 volumes because of changes in survey procedures.

Table 42.--Net annual growth of growing stock on commercial forest land by species group and county, Northwest Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	All counties	County					
		Ashland	Barron	Bayfield	Burnett	Douglas	Iron
Softwoods							
Jack pine	10,607	3	18	2,168	2,294	3,432	--
Red pine	8,768	693	15	2,398	1,430	749	194
White pine	4,234	622	107	1,174	222	176	171
White spruce	6,875	1,930	--	554	--	729	600
Black spruce	2,338	222	29	99	19	637	276
Balsam fir	11,877	1,685	--	1,224	-13	2,847	2,340
Hemlock	466	103	--	43	--	10	228
Tamarack	796	-61	22	148	49	38	133
Northern white-cedar	3,560	1,058	--	385	--	279	938
Other softwoods	16	--	--	--	--	--	5
Total	49,537	6,255	191	8,193	4,001	8,897	4,885
Hardwoods							
White oak	1,287	2	270	14	181	30	--
Select red oak	10,720	163	654	2,749	1,211	792	258
Other red oak	-194	--	14	-105	-80	-18	--
Select hickory	--	--	--	--	--	--	--
Other hickory	210	--	-1	--	11	--	--
Basswood	10,794	1,173	139	806	161	505	846
Beech	--	--	--	--	--	--	--
Yellow birch	1,174	102	2	47	3	66	92
Hard maple	18,495	4,038	115	2,880	82	900	2,629
Soft maple	22,289	2,666	423	3,373	377	1,590	1,382
Elm	2,978	431	146	296	114	115	447
Black ash	8,627	842	26	1,162	251	1,296	309
White & green ash	3,269	217	228	385	30	73	73
Sycamore	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--
Willow	4	--	--	--	4	--	--
Hackberry	--	--	--	--	--	--	--
Balsam poplar	198	--	--	19	--	144	26
Bigtooth aspen	8,194	501	62	1,765	973	510	235
Quaking aspen	26,291	3,117	836	4,387	918	3,324	1,093
Paper birch	14,620	1,787	450	3,161	523	2,412	870
Black cherry	562	55	17	--	42	--	61
Black walnut	--	--	--	--	--	--	--
Butternut	170	--	5	--	10	--	--
Other hardwoods	2	--	--	--	--	2	--
Total	129,690	15,094	3,386	20,939	4,811	11,741	8,321
All species	179,227	21,349	3,577	29,132	8,812	20,638	13,206

(Table 42 continued on next page)

(Table 42 continued)

Species group	County					
	Polk	Price	Rusk	Sawyer	Taylor	Washburn
Softwoods						
Jack pine	537	81	--	89	--	1,985
Red pine	7	1,098	449	1,141	122	472
White pine	85	121	263	892	174	227
White spruce	28	753	87	1,535	653	6
Black spruce	20	239	152	284	293	68
Balsam fir	--	1,732	353	971	603	135
Hemlock	--	-12	8	61	38	-13
Tamarack	42	53	-13	105	116	164
Northern white-cedar	--	530	12	211	54	93
Other softwoods	--	--	--	--	--	11
Total	719	4,595	1,311	5,289	2,053	3,148
Hardwoods						
White oak	350	5	118	137	4	176
Select red oak	1,043	276	854	1,291	426	1,003
Other red oak	-72	--	10	--	--	57
Select hickory	--	--	--	--	--	--
Other hickory	40	--	52	37	71	--
Basswood	449	926	1,473	2,226	1,302	788
Beech	--	--	--	--	--	--
Yellow birch	53	49	106	449	202	3
Hard maple	221	1,986	1,328	2,171	1,485	660
Soft maple	592	2,738	1,528	2,677	4,093	850
Elm	184	224	440	532	1	48
Black ash	334	1,296	678	1,014	937	482
White & green ash	414	283	397	593	417	159
Sycamore	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--
Willow	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	9
Bigtooth aspen	457	693	142	831	944	1,081
Quaking aspen	813	2,379	2,900	2,495	2,546	1,483
Paper birch	351	719	1,029	1,988	468	862
Black cherry	38	88	149	40	15	57
Black walnut	--	--	--	--	--	--
Butternut	116	--	30	13	4	-8
Other hardwoods	--	--	--	--	--	--
Total	5,383	11,662	11,234	16,494	12,915	7,710
All species	6,102	16,257	12,545	21,783	14,968	10,858

Table 43.--Net annual growth of sawtimber on commercial forest land by species group and county, Northwest Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Species group	All counties	County					
		Ashland	Barron	Bayfield	Burnett	Douglas	Iron
Softwoods							
Jack pine	32,952	109	612	7,739	5,283	13,949	--
Red pine	36,234	4,834	724	11,623	709	2,237	1,165
White pine	24,449	3,211	803	6,860	1,076	1,269	1,189
White spruce	25,900	7,544	--	3,559	--	3,564	3,152
Black spruce	1,324	179	--	--	--	158	584
Balsam fir	40,466	8,231	--	4,328	--	10,676	6,521
Hemlock	2,382	542	--	245	--	36	1,186
Tamarack	4,123	205	74	878	59	366	1
Northern white-cedar	18,269	6,558	--	1,250	--	1,066	4,082
Other softwoods	99	--	--	--	--	--	--
Total	186,198	31,413	2,213	36,482	7,127	33,321	17,880
Hardwoods							
White oak	5,331	5	1,832	23	1,178	9	--
Select red oak	43,540	1,015	3,551	9,576	5,720	2,713	225
Other red oak	5,156	--	59	50	2,681	31	--
Select hickory	--	--	--	--	--	--	--
Other hickory	166	--	20	--	--	--	--
Basswood	36,516	5,943	635	2,097	464	824	2,842
Beech	--	--	--	--	--	--	--
Yellow birch	3,607	311	--	115	--	146	150
Hard maple	34,046	7,341	343	4,505	288	2,059	3,468
Soft maple	26,531	4,669	147	1,670	1,021	1,445	626
Elm	13,119	1,765	732	787	440	143	1,434
Black ash	15,970	1,901	1,246	2,081	1,409	2,940	523
White & green ash	11,871	738	983	374	109	74	334
Sycamore	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--
Willow	16	--	--	--	16	--	--
Hackberry	--	--	--	--	--	--	--
Balsam poplar	470	--	--	116	--	323	31
Bigtooth aspen	31,043	858	414	7,635	3,898	3,877	302
Quaking aspen	80,988	8,880	1,621	17,796	4,634	11,925	5,483
Paper birch	26,972	3,953	103	5,524	688	5,902	2,339
Black cherry	1,038	251	22	--	101	--	253
Black walnut	--	--	--	--	--	--	--
Butternut	723	--	102	--	117	--	--
Other hardwoods	--	--	--	--	--	--	--
Total	337,103	37,630	11,810	52,349	22,764	32,411	18,010
All species	523,301	69,043	14,023	88,831	29,891	65,732	35,890

[1/] International 1/4-inch rule.

(Table 43 continued on next page)

(Table 43 continued)

Species group	County					
	Polk	Price	Rusk	Sawyer	Taylor	Washburn
Softwoods						
Jack pine	1,092	520	--	922	--	2,726
Red pine	40	4,352	1,115	6,636	881	1,918
White pine	516	631	1,525	5,303	1,049	1,017
White spruce	165	2,422	394	3,191	1,878	31
Black spruce	--	104	--	253	46	--
Balsam fir	--	2,994	1,372	3,664	2,161	519
Hemlock	--	-22	35	309	111	-60
Tamarack	185	1,284	122	163	303	483
Northern white-cedar	--	3,401	94	1,133	300	385
Other softwoods	--	--	--	--	--	99
Total	1,998	15,686	4,657	21,574	6,729	7,118
Hardwoods						
White oak	1,365	20	226	137	16	520
Select red oak	5,688	470	3,467	5,774	1,766	3,575
Other red oak	1,304	--	155	615	--	261
Select hickory	--	--	--	--	--	--
Other hickory	--	--	34	--	112	--
Basswood	1,390	3,825	5,273	6,323	6,164	736
Beech	--	--	--	--	--	--
Yellow birch	--	--	220	1,753	809	103
Hard maple	276	3,735	4,217	3,458	3,787	569
Soft maple	1,436	3,289	1,948	2,703	6,087	1,490
Elm	617	2,167	1,987	2,254	559	234
Black ash	223	946	2,043	1,743	614	301
White & green ash	1,175	1,631	1,213	2,244	2,700	296
Sycamore	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--
Willow	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--
Bigtooth aspen	1,743	1,684	688	5,641	1,892	2,411
Quaking aspen	1,789	5,341	7,027	7,161	3,062	6,269
Paper birch	200	1,580	1,027	2,917	1,378	1,361
Black cherry	--	252	106	53	--	--
Black walnut	--	--	--	--	--	--
Butternut	108	--	304	--	17	75
Other hardwoods	--	--	--	--	--	--
Total	17,314	24,940	29,935	42,776	28,963	18,201
All species	19,312	40,626	34,592	64,350	35,692	25,319

Table 44.--Net annual growth of growing stock on commercial forest land by ownership class and softwoods and hardwoods, Northwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Ownership class	All species	Softwoods	Hardwoods
National Forest	27,716	8,210	19,506
Miscellaneous federal	155	42	113
State	5,861	1,678	4,183
County and municipal	37,864	12,279	25,585
Indian	3,913	1,436	2,477
Forest industry	18,562	5,600	12,962
Farmer	14,926	2,881	12,045
Misc. private-corp.	8,148	2,488	5,660
Misc. private-indiv.	62,082	14,923	47,159
All owners	179,227	49,537	129,690

Table 45.--Net annual growth of growing stock on commercial forest land by species group and type, Northwest Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	10,607	8,020	142	23	--	--	--	--
Red pine	8,768	848	6,211	182	311	10	16	--
White pine	4,234	100	573	1,101	176	36	34	-13
White spruce	6,875	--	26	61	705	3,373	25	55
Black spruce	2,338	9	--	33	166	1	1,246	87
Balsam fir	11,877	7	48	73	2,190	69	120	685
Hemlock	466	--	--	--	-20	--	24	11
Tamarack	796	--	--	-19	69	--	-84	119
Northern white-cedar	3,560	--	20	--	586	44	159	1,855
Other softwoods	16	--	--	11	--	--	--	--
Total	49,537	8,984	7,020	1,465	4,183	3,533	1,540	2,799
Hardwoods								
White oak	1,287	--	--	-7	1	--	--	--
Select red oak	10,720	90	90	13	3	--	16	--
Other red oak	-194	26	--	-23	--	--	--	--
Select hickory	--	--	--	--	--	--	--	--
Other hickory	210	--	--	--	--	--	--	--
Basswood	10,794	2	--	14	--	--	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	1,174	--	--	--	-34	--	1	-38
Hard maple	18,495	--	32	--	34	2	6	--
Soft maple	22,289	--	118	34	222	13	22	2
Elm	2,978	--	3	-4	17	--	--	--
Black ash	8,627	--	--	--	566	3	--	632
White & green ash	3,269	--	5	--	6	14	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--
Willow	4	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	198	--	--	--	3	--	--	--
Bigtooth aspen	8,194	236	50	63	12	4	-7	--
Quaking aspen	26,291	173	107	313	-41	3	2	29
Paper birch	14,620	38	94	56	214	7	30	77
Black cherry	562	--	--	--	2	--	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	170	--	--	--	--	--	--	--
Other hardwoods	2	--	--	--	--	--	--	--
Total	129,690	565	499	459	1,005	46	70	702
All species	179,227	9,549	7,519	1,924	5,188	3,579	1,610	3,501

(Table 45 continued on next page)

(Table 45 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods								
Jack pine	17	1,465	11	21	815	24	--	69
Red pine	7	240	7	160	706	70	--	--
White pine	117	237	156	779	801	127	--	10
White spruce	19	--	226	597	1,438	342	--	8
Black spruce	378	--	30	78	215	95	--	--
Balsam fir	543	31	1,246	2,016	3,924	925	--	--
Hemlock	2	9	45	338	45	12	--	--
Tamarack	507	-1	118	-25	83	15	--	14
Northern white-cedar	11	--	318	406	125	36	--	--
Other softwoods	--	--	--	5	--	--	--	--
Total	1,601	1,981	2,157	4,375	8,152	1,646	--	101
Hardwoods								
White oak	--	722	56	224	253	30	--	8
Select red oak	--	5,195	123	2,857	1,839	494	--	--
Other red oak	--	-88	-14	16	-77	3	--	-37
Select hickory	--	--	--	--	--	--	--	--
Other hickory	--	22	4	172	12	--	--	--
Basswood	--	383	415	9,187	665	128	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	--	2	84	1,053	105	1	--	--
Hard maple	5	183	506	16,446	929	285	--	67
Soft maple	160	772	2,658	11,621	5,360	1,304	--	3
Elm	--	-7	974	1,507	438	50	--	--
Black ash	--	20	4,356	1,816	1,087	130	--	17
White & green ash	--	159	192	2,593	216	84	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--
Willow	--	--	4	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	-1	26	-5	179	-4	--	--
Bigtooth aspen	331	409	21	987	5,937	151	--	-
Quaking aspen	72	379	567	2,542	21,816	259	--	70
Paper birch	54	934	251	2,080	5,411	5,313	--	61
Black cherry	1	-15	5	324	214	31	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	--	24	--	155	-9	--	--	--
Other hardwoods	--	--	2	--	--	--	--	--
Total	623	9,093	10,230	53,575	44,375	8,259	--	189
All species	2,224	11,074	12,387	57,950	52,527	9,905	--	290

Table 46.--Net annual growth of sawtimber on commercial forest land by species group and type, Northwest Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	32,952	21,534	1,902	51	--	--	--	--
Red pine	36,234	2,398	24,321	1,112	1,517	--	721	--
White pine	24,449	798	2,951	5,780	997	216	113	-118
White spruce	25,900	--	124	341	3,634	10,167	120	332
Black spruce	1,324	--	--	--	392	59	411	165
Balsam fir	40,466	--	627	445	16,042	210	124	54
Hemlock	2,382	--	--	--	-107	--	132	46
Tamarack	4,123	--	--	70	294	--	1	427
Northern white-cedar	18,269	--	58	--	2,612	--	584	10,907
Other softwoods	99	--	--	99	--	--	--	--
Total	186,198	24,730	29,983	7,898	25,381	10,652	2,206	11,813
Hardwoods								
White oak	5,331	--	--	3	--	--	--	--
Select red oak	43,540	137	213	--	16	--	13	--
Other red oak	5,156	643	--	11	--	--	-3	--
Select hickory	--	--	--	--	--	--	--	--
Other hickory	166	--	--	--	--	--	--	--
Basswood	36,516	--	--	20	--	--	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	3,607	--	--	--	-151	--	5	-128
Hard maple	34,046	--	--	--	73	--	--	--
Soft maple	26,531	--	--	--	123	95	--	62
Elm	13,119	--	--	9	137	--	--	--
Black ash	15,970	--	--	--	1,544	11	--	10
White & green ash	11,871	--	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--
Willow	16	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	470	--	--	--	--	--	--	--
Bigtooth aspen	31,043	--	115	250	--	--	-15	-6
Quaking aspen	80,988	159	618	912	1,941	674	48	264
Paper birch	26,972	--	414	49	2,354	--	13	--
Black cherry	1,038	--	--	--	53	--	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	723	--	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--
Total	337,103	939	1,360	1,254	6,090	780	61	202
All species	523,301	25,669	31,343	9,152	31,471	11,432	2,267	12,015

[1/] International 1/4-inch rule.

(Table 46 continued on next page)

(Table 46 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods								
Jack pine	--	5,759	75	130	3,243	202	--	56
Red pine	38	529	43	1,065	4,116	374	--	--
White pine	808	1,369	1,211	4,642	4,601	757	--	324
White spruce	65	--	1,343	3,624	4,686	1,419	--	45
Black spruce	76	--	105	-13	110	19	--	--
Balsam fir	93	35	3,554	6,201	10,986	2,095	--	--
Hemlock	8	50	245	1,739	215	54	--	--
Tamarack	1,034	--	844	-8	736	99	--	626
Northern white-cedar	--	--	2,015	1,626	388	79	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	2,122	7,742	9,435	19,006	29,081	5,098	--	1,051
Hardwoods								
White oak	--	2,561	208	1,713	760	74	--	12
Select red oak	--	20,309	674	14,712	5,470	1,996	--	--
Other red oak	--	1,790	675	390	1,551	82	--	17
Select hickory	--	--	--	--	--	--	--	--
Other hickory	--	7	--	159	--	--	--	--
Basswood	--	462	1,042	34,317	556	119	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	--	--	565	3,349	-3	-30	--	--
Hard maple	--	215	366	32,878	401	113	--	--
Soft maple	36	595	5,984	17,424	1,988	224	--	--
Elm	--	-156	3,790	8,294	841	204	--	--
Black ash	--	194	8,733	4,115	1,169	194	--	--
White & green ash	--	975	1,284	9,242	251	119	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--
Willow	--	--	16	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	--	27	-34	499	-22	--	--
Bigtooth aspen	21	808	102	2,402	26,437	929	--	--
Quaking aspen	90	2,666	1,334	14,708	53,781	3,207	--	586
Paper birch	108	2,111	1,646	6,374	9,922	3,981	--	--
Black cherry	--	--	--	778	101	106	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	--	229	--	494	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--
Total	255	32,766	26,446	151,315	103,724	11,296	--	615
All species	2,377	40,508	35,881	170,321	132,805	16,394	--	1,666

Table 47.--Net annual growth of growing stock on commercial forest land by forest type, stand-size class, and basal-area class, Northwest Unit, Wisconsin, 1982

(In thousand cubic feet)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine															
Sawtimber	1,260	--	--	--	139	44	94	149	229	138	28	406	33	--	--
Poletimber	5,923	--	--	--	57	381	214	268	758	683	2,210	944	287	121	--
Sapling & seedling	2,366	15	--	240	214	171	152	108	1,304	162	--	--	--	--	--
All stands	9,549	15	--	240	410	596	460	525	2,291	983	2,238	1,350	320	121	--
Red pine															
Sawtimber	3,595	--	--	--	43	71	88	--	--	68	234	1,476	615	860	140
Poletimber	3,108	--	--	--	--	--	113	--	38	371	393	473	947	773	--
Sapling & seedling	816	-24	--	8	30	--	46	--	435	--	--	321	--	--	--
All stands	7,519	-24	--	8	73	71	247	--	473	439	627	2,270	1,562	1,633	140
White pine															
Sawtimber	1,704	--	--	--	41	--	38	--	--	71	--	784	364	406	--
Poletimber	220	--	--	--	--	--	--	--	--	33	--	72	115	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	1,924	--	--	--	41	--	38	--	--	104	--	856	479	406	--
Balsam fir															
Sawtimber	1,794	--	--	--	--	114	-48	26	-107	187	100	440	788	186	108
Poletimber	2,403	--	--	19	--	--	-1,045	621	48	693	163	353	646	760	145
Sapling & seedling	991	21	12	150	20	203	-56	135	313	55	94	--	--	44	--
All stands	5,188	21	12	169	20	317	-1,149	782	254	935	357	793	1,434	990	253
White spruce															
Sawtimber	1,323	--	--	--	--	--	--	--	--	--	--	--	--	248	1,075
Poletimber	2,165	--	--	--	--	--	--	--	--	--	--	--	1,921	244	--
Sapling & seedling	91	--	--	--	--	--	91	--	--	--	--	--	--	--	--
All stands	3,579	--	--	--	--	--	91	--	--	--	--	--	1,921	492	1,075
Black spruce															
Sawtimber	56	--	--	--	--	--	--	--	--	--	--	--	56	--	--
Poletimber	1,104	--	--	--	--	--	155	119	238	115	80	57	340	--	--
Sapling & seedling	450	--	6	27	10	-81	47	56	35	259	25	--	66	--	--
All stands	1,610	--	6	27	10	-81	202	175	273	374	105	57	462	--	--
Northern white-cedar															
Sawtimber	1,249	--	--	--	--	--	1	59	75	39	53	--	501	225	296
Poletimber	2,175	--	--	--	--	--	174	--	28	117	--	1,434	235	187	--
Sapling & seedling	77	--	-3	--	--	--	52	--	--	--	--	--	--	28	--
All stands	3,501	--	-3	--	--	--	227	59	103	156	53	1,434	736	440	296

(Table 47 continued on next page)

(Table 47 continued)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack															
Sawtimber	163	--	11	--	--	23	15	15	--	--	--	99	--	--	--
Poletimber	1,355	--	--	8	--	94	113	791	--	135	16	226	-28	--	--
Sapling & seedling	706	2	5	152	29	123	128	-5	175	24	73	--	--	--	--
All stands	2,224	2	16	160	29	240	256	801	175	159	89	325	-28	--	--
Oak-hickory															
Sawtimber	2,812	--	--	--	1	41	18	143	35	366	142	1,055	931	80	--
Poletimber	6,358	--	--	18	--	-9	19	204	257	1,114	1,176	2,057	269	1,253	--
Sapling & seedling	1,904	129	114	36	405	701	149	--	41	327	--	2	--	--	--
All stands	11,074	129	114	54	406	733	186	347	333	1,807	1,318	3,114	1,200	1,333	--
Elm-ash-soft maple															
Sawtimber	2,809	--	17	13	46	25	377	62	9	433	9	445	1,119	254	--
Poletimber	8,279	--	--	35	7	494	616	534	1,037	1,503	1,117	1,211	1,228	462	35
Sapling & seedling	1,299	-105	4	187	108	290	308	72	34	350	46	--	5	--	--
All stands	12,387	-105	21	235	161	809	1,301	668	1,080	2,286	1,172	1,656	2,352	716	35
Maple-birch															
Sawtimber	15,484	--	--	37	37	--	95	312	859	714	1,189	2,806	6,434	2,530	471
Poletimber	37,194	--	--	--	56	335	584	311	2,659	4,070	3,726	11,136	10,058	4,064	195
Sapling & seedling	5,272	62	24	54	146	662	1,062	966	714	586	310	564	49	73	--
All stands	57,950	62	24	91	239	997	1,741	1,589	4,232	5,370	5,225	14,506	16,541	6,667	666
Aspen															
Sawtimber	5,826	--	--	59	68	156	181	393	527	943	374	747	2,032	346	--
Poletimber	34,226	--	9	142	374	1,489	3,221	2,029	2,655	5,644	3,988	6,175	6,473	1,921	106
Sapling & seedling	12,475	1,402	846	1,080	2,009	1,570	2,097	829	1,482	867	80	191	22	--	--
All stands	52,527	1,402	855	1,281	2,451	3,215	5,499	3,251	4,664	7,454	4,442	7,113	8,527	2,267	106
Paper birch															
Sawtimber	882	--	--	--	--	176	--	--	57	26	44	191	342	46	--
Poletimber	7,595	--	--	52	71	35	527	133	287	492	654	1,961	2,333	820	230
Sapling & seedling	1,428	-45	--	40	54	180	320	160	23	64	351	281	--	--	--
All stands	9,905	-45	--	92	125	391	847	293	367	582	1,049	2,433	2,675	866	230
Exotic															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	290	24	29	10	65	10	102	47	--	--	3	--	--	--	--
All types															
Sawtimber	38,957	--	28	109	375	650	859	1,159	1,684	2,985	2,173	8,449	13,215	5,181	2,090
Poletimber	112,105	--	9	274	565	2,819	4,691	5,010	8,005	14,970	13,523	26,099	24,824	10,605	711
Sapling & seedling	27,875	1,457	1,008	1,974	3,025	3,819	4,396	2,321	4,556	2,694	979	1,359	142	145	--
Nonstocked	290	24	29	10	65	10	102	47	--	--	3	--	--	--	--
All stands	179,227	1,481	1,074	2,367	4,030	7,298	10,048	8,537	14,245	20,649	16,678	35,907	38,181	15,931	2,801

Table 48.--Net annual growth of sawtimber on commercial forest land by forest type, stand-size class, and basal-area class, Northwest Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine															
Sawtimber	10,986	--	--	--	717	146	316	3,058	2,619	1,456	114	2,291	269	--	--
Poletimber	12,272	--	--	--	104	--	220	863	371	1,544	4,026	5,010	134	--	--
Sapling & seedling	2,411	47	--	57	139	327	293	--	1,455	93	--	--	--	--	--
All stands	25,669	47	--	57	960	473	829	3,921	4,445	3,093	4,140	7,301	403	--	--
Red pine															
Sawtimber	24,822	--	--	--	300	501	471	--	--	71	2,726	9,338	4,159	6,449	807
Poletimber	6,176	--	--	--	--	--	465	--	25	481	137	2,651	1,915	502	--
Sapling & seedling	345	54	--	--	224	--	--	--	43	--	--	24	--	--	--
All stands	31,343	54	--	--	524	501	936	--	68	552	2,863	12,013	6,074	6,951	807
White pine															
Sawtimber	8,408	--	--	--	324	--	110	--	--	240	--	3,633	1,877	2,224	--
Poletimber	744	--	--	--	--	--	--	--	--	305	--	308	131	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	9,152	--	--	--	324	--	110	--	--	545	--	3,941	2,008	2,224	--
Balsam fir															
Sawtimber	15,463	--	--	--	--	1,691	3,004	373	616	726	293	2,474	5,417	604	265
Poletimber	14,461	--	--	86	--	--	970	145	85	2,994	1,551	93	6,299	2,068	170
Sapling & seedling	1,547	--	-46	-55	24	292	-72	546	303	104	250	--	--	201	--
All stands	31,471	--	-46	31	24	1,983	3,902	1,064	1,004	3,824	2,094	2,567	11,716	2,873	435
White spruce															
Sawtimber	8,970	--	--	--	--	--	--	--	--	--	--	--	--	2,346	6,624
Poletimber	2,462	--	--	--	--	--	--	--	--	--	--	--	1,883	579	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	11,432	--	--	--	--	--	--	--	--	--	--	--	1,883	2,925	6,624
Black spruce															
Sawtimber	315	--	--	--	--	--	--	--	--	--	--	--	315	--	--
Poletimber	1,677	--	--	--	--	--	48	701	25	158	30	120	595	--	--
Sapling & seedling	275	--	--	29	--	106	93	8	--	39	--	--	--	--	--
All stands	2,267	--	--	29	--	106	141	709	25	197	30	120	910	--	--
Northern white-cedar															
Sawtimber	5,224	--	--	--	--	--	-7	432	279	131	236	--	2,503	1,036	614
Poletimber	6,707	--	--	--	--	--	479	--	55	284	--	4,963	351	575	--
Sapling & seedling	84	--	--	--	--	--	7	--	--	--	--	--	--	77	--
All stands	12,015	--	--	--	--	--	479	432	334	415	236	4,963	2,854	1,688	614

(Table 48 continued on next page)

[1/] International 1/4-inch rule.

(Table 48 continued)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack															
Sawtimber	814	--	68	--	--	133	101	97	--	--	--	415	--	--	--
Poletimber	992	--	--	--	--	399	109	93	--	278	37	105	-29	--	--
Sapling & seedling	571	--	--	63	96	17	191	117	--	60	27	--	--	--	--
All stands	2,377	--	68	63	96	549	401	307	--	338	64	520	-29	--	--
Oak-hickory															
Sawtimber	17,872	--	--	--	272	187	64	1,603	179	1,605	1,084	6,459	5,347	1,072	--
Poletimber	18,767	--	--	--	--	65	17	325	411	4,570	1,829	7,062	976	3,512	--
Sapling & seedling	3,869	314	110	89	1,786	1,175	274	--	36	85	--	--	--	--	--
All stands	40,508	314	110	89	2,058	1,427	355	1,928	626	6,260	2,913	13,521	6,323	4,584	--
Elm-ash-soft maple															
Sawtimber	15,493	--	66	61	170	50	1,702	652	13	943	59	2,653	8,226	898	--
Poletimber	16,311	--	--	--	59	308	1,263	280	2,238	4,421	2,256	2,364	2,517	468	137
Sapling & seedling	4,077	104	9	656	1,735	193	802	--	-80	84	503	--	71	--	--
All stands	35,881	104	75	717	1,964	551	3,767	932	2,171	5,448	2,818	5,017	10,814	1,366	137
Maple-birch															
Sawtimber	81,215	--	--	405	102	--	402	2,918	4,833	5,391	5,843	17,532	30,297	11,873	1,619
Poletimber	78,947	--	--	--	79	230	354	677	3,670	9,449	8,144	23,505	26,551	5,999	289
Sapling & seedling	10,159	72	799	124	256	1,993	1,862	1,245	329	1,210	236	1,775	169	89	--
All stands	170,321	72	799	529	437	2,223	2,618	4,840	8,832	16,050	14,223	42,812	57,017	17,961	1,908
Aspen															
Sawtimber	36,533	--	--	753	416	812	1,869	3,173	4,231	7,846	2,230	4,547	8,850	1,806	--
Poletimber	66,841	--	--	281	494	1,687	5,399	3,662	6,064	12,281	5,194	14,148	15,401	2,127	103
Sapling & seedling	29,431	4,905	4,655	3,275	2,210	4,630	3,987	2,291	2,498	407	59	498	16	--	--
All stands	132,805	4,905	4,655	4,309	3,120	7,129	11,255	9,126	12,793	20,534	7,483	19,193	24,267	3,933	103
Paper birch															
Sawtimber	3,734	--	--	--	--	103	--	--	320	186	211	1,076	1,428	410	--
Poletimber	11,312	--	--	--	176	-5	754	614	372	480	1,386	2,796	2,728	1,463	548
Sapling & seedling	1,348	--	--	27	671	14	199	214	--	106	11	106	--	--	--
All stands	16,394	--	--	27	847	112	953	828	692	772	1,608	3,978	4,156	1,873	548
Exotic															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	1,666	435	583	45	564	22	--	17	--	--	--	--	--	--	--
All types															
Sawtimber	229,849	--	134	1,219	2,301	3,623	8,032	12,306	13,090	18,595	12,796	50,418	68,688	28,718	9,929
Poletimber	237,669	--	--	367	912	2,684	10,078	7,360	13,316	37,245	24,590	63,125	59,452	17,293	1,247
Sapling & seedling	54,117	5,496	5,527	4,265	7,141	8,747	7,636	4,421	4,584	2,188	1,086	2,403	256	367	--
Nonstocked	1,666	435	583	45	564	22	--	17	--	--	--	--	--	--	--
All stands	523,301	5,931	6,244	5,896	10,918	15,076	25,746	24,104	30,990	58,028	38,472	115,946	128,396	46,378	11,176

Table 49.--Current annual growing-stock removals on commercial forest land by species group and county, Northwest Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	All counties	County					
		Ashland	Barron	Bayfield	Burnett	Douglas	Iron
Softwoods							
Jack pine	6,263	81	6	1,374	1,293	2,393	--
Red pine	4,150	896	15	752	296	710	157
White pine	2,104	336	69	449	71	75	126
White spruce	741	226	--	211	--	10	72
Black spruce	323	80	--	32	--	6	38
Balsam fir	2,921	865	--	457	2	133	170
Hemlock	743	45	--	27	--	--	22
Tamarack	323	72	--	15	3	--	2
Northern white-cedar	1,018	33	--	4	--	--	22
Other softwoods	--	--	--	--	--	--	--
Total	18,586	2,634	90	3,321	1,665	3,327	609
Hardwoods							
White oak	1,118	10	182	30	251	29	--
Select red oak	5,451	113	737	857	504	220	136
Other red oak	535	--	33	12	241	18	--
Hickory	65	--	--	--	--	--	--
Basswood	1,957	106	135	18	50	17	75
Beech	--	--	--	--	--	--	--
Yellow birch	1,191	175	4	154	6	12	115
Hard maple	6,877	853	133	890	51	64	527
Soft maple	2,664	294	90	265	71	54	228
Elm	5,158	839	114	297	187	72	385
Ash	2,703	192	111	658	243	142	96
Cottonwood	--	--	--	--	--	--	--
Balsam poplar	47	--	--	37	--	10	--
Bigtooth aspen	9,682	459	121	2,611	819	538	596
Quaking aspen	34,064	2,951	339	5,413	1,617	4,745	3,985
Paper birch	5,134	508	28	960	72	301	377
Black walnut	--	--	--	--	--	--	--
Other hardwoods[1/]	171	8	21	--	--	--	2
Total	76,817	6,508	2,048	12,202	4,112	6,222	6,522
All species	95,403	9,142	2,138	15,523	5,777	9,549	7,131

(Table 49 continued on next page)

[1/] Includes black cherry and butternut.

(Table 49 continued)

Species group	County					
	Polk	Price	Rusk	Sawyer	Taylor	Washburn
Softwoods						
Jack pine	125	91	--	215	--	685
Red pine	14	216	132	380	241	341
White pine	19	189	152	282	224	112
White spruce	--	85	1	78	23	35
Black spruce	--	62	--	53	18	34
Balsam fir	--	477	--	411	246	160
Hemlock	--	58	15	497	79	--
Tamarack	--	120	7	72	30	2
Northern white-cedar	--	897	--	31	31	--
Other softwoods	--	--	--	--	--	--
Total	158	2,195	307	2,019	892	1,369
Hardwoods						
White oak	360	22	90	32	41	71
Select red oak	604	362	860	366	348	344
Other red oak	153	--	28	6	--	44
Hickory	2	--	30	--	33	--
Basswood	113	609	399	222	197	16
Beech	--	--	--	--	--	--
Yellow birch	1	234	94	195	184	17
Hard maple	64	1,799	668	843	834	151
Soft maple	17	602	307	268	386	82
Elm	119	1,637	545	234	689	40
Ash	59	419	272	230	250	31
Cottonwood	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--
Bigtooth aspen	62	697	306	1,767	634	1,072
Quaking aspen	153	2,893	3,268	4,668	2,058	1,974
Paper birch	48	949	471	804	382	234
Black walnut	--	--	--	--	--	--
Other hardwoods[1/]	2	75	20	26	14	3
Total	1,757	10,298	7,358	9,661	6,050	4,079
All species	1,915	12,493	7,665	11,680	6,942	5,448

[1/] Includes black cherry and butternut.

Table 50.--Current annual sawtimber removals on commercial forest land by species group and county, Northwest Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Species group	All counties	County					
		Ashland	Barron	Bayfield	Burnett	Douglas	Iron
Softwoods							
Jack pine	9,315	137	9	2,782	1,645	2,952	--
Red pine	12,770	2,261	66	3,018	883	1,489	691
White pine	9,788	1,570	359	2,185	248	173	572
White spruce	2,656	618	--	897	--	52	371
Black spruce	154	38	--	--	--	6	40
Balsam fir	6,753	1,701	--	1,562	--	458	415
Hemlock	643	88	--	51	--	--	47
Tamarack	386	100	--	7	7	--	3
Northern white-cedar	1,293	49	--	7	--	--	38
Other softwoods	--	--	--	--	--	--	--
Total	43,758	6,562	434	10,509	2,783	5,130	2,177
Hardwoods							
White oak	3,934	30	822	95	792	33	--
Select red oak	20,781	376	3,258	2,753	1,583	671	549
Other red oak	2,243	--	104	6	1,014	30	--
Hickory	178	--	1	--	--	--	--
Basswood	7,003	463	416	92	53	37	280
Beech	--	--	--	--	--	--	--
Yellow birch	2,431	419	--	295	--	41	329
Hard maple	21,711	2,957	671	2,245	176	222	1,888
Soft maple	6,226	606	154	560	73	67	413
Elm	16,307	3,115	518	513	223	22	1,370
Ash	4,964	435	409	171	92	67	243
Cottonwood	--	--	--	--	--	--	--
Balsam poplar	51	--	--	34	--	17	--
Bigtooth aspen	30,821	996	729	7,810	2,185	1,921	1,541
Quaking aspen	83,522	7,080	980	13,225	3,534	11,008	12,207
Paper birch	5,413	348	47	1,124	203	283	522
Black walnut	--	--	--	--	--	--	--
Other hardwoods[2/]	225	19	81	--	2	--	4
Total	205,810	16,844	8,190	28,923	9,930	14,419	19,346
All species	249,568	23,406	8,624	39,432	12,713	19,549	21,523

(Table 50 continued on next page)

[1/] International 1/4-inch rule.

[2/] Includes black cherry and butternut.

(Table 50 continued)

Species group	County					
	Polk	Price	Rusk	Sawyer	Taylor	Washburn
Softwoods						
Jack pine	160	123	--	421	--	1,086
Red pine	66	598	528	1,028	966	1,176
White pine	102	980	775	1,363	997	464
White spruce	--	220	4	206	57	231
Black spruce	--	15	--	51	4	--
Balsam fir	--	909	2	820	437	449
Hemlock	--	144	31	103	179	--
Tamarack	--	136	11	79	39	4
Northern white-cedar	--	1,120	--	29	50	--
Other softwoods	--	--	--	--	--	--
Total	328	4,245	1,351	4,100	2,729	3,410
Hardwoods						
White oak	1,418	61	258	107	141	177
Select red oak	2,804	1,259	3,453	1,623	1,507	945
Other red oak	809	--	165	28	--	87
Hickory	--	--	68	--	109	--
Basswood	548	2,279	1,521	615	614	85
Beech	--	--	--	--	--	--
Yellow birch	--	459	218	191	425	54
Hard maple	341	4,913	2,483	2,501	2,846	468
Soft maple	83	1,641	785	581	1,054	209
Elm	554	4,823	2,035	791	2,219	124
Ash	284	1,122	721	648	719	53
Cottonwood	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--
Bigtooth aspen	326	1,653	1,412	5,986	2,891	3,371
Quaking aspen	682	8,194	8,653	10,153	4,044	3,762
Paper birch	37	760	265	985	547	292
Black walnut	--	--	--	--	--	--
Other hardwoods[2/]	8	23	26	39	17	6
Total	7,894	27,187	22,063	24,248	17,133	9,633
All species	8,222	31,432	23,414	28,348	19,862	13,043

[2/] Includes black cherry and butternut.

Table 51.--Average annual growing-stock removals on commercial forest land by species group and county, Northwest Unit, Wisconsin, 1967-1982

(In thousand cubic feet per year)

Species group	All counties	County					
		Ashland	Barron	Bayfield	Burnett	Douglas	Iron
Softwoods							
Jack pine	7,009	6	--	1,138	2,286	2,083	--
Red pine	335	3	--	162	--	--	91
White pine	1,261	7	--	259	80	43	--
White spruce	964	613	--	156	--	--	102
Black spruce	690	299	--	15	--	128	53
Balsam fir	3,959	1,673	--	26	--	407	220
Hemlock	1,805	235	--	1	--	--	859
Tamarack	767	38	118	13	--	--	--
Northern white-cedar	590	25	--	3	65	--	58
Other softwoods	--	--	--	--	--	--	--
Total	17,380	2,899	118	1,773	2,431	2,661	1,383
Hardwoods							
White oak	321	2	--	1	56	--	--
Select red oak	3,044	3	--	1,004	349	43	--
Other red oak	79	1	--	--	75	--	--
Hickory	--	--	--	--	--	--	--
Basswood	2,484	234	58	262	45	14	--
Beech	--	--	--	--	--	--	--
Yellow birch	1,208	4	--	50	--	--	450
Hard maple	5,004	1,402	--	720	--	--	85
Soft maple	3,115	374	64	1,238	49	71	74
Elm	4,154	937	--	65	142	115	74
Ash	2,031	276	--	778	251	139	--
Cottonwood	--	--	--	--	--	--	--
Balsam poplar	22	--	--	22	--	--	--
Bigtooth aspen	9,119	142	104	3,159	1,382	1,637	304
Quaking aspen	19,042	3,235	562	3,021	1,193	1,797	1,950
Paper birch	4,889	639	--	1,896	--	441	366
Black cherry	116	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--
Butternut	--	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--
Total	54,628	7,249	788	12,216	3,542	4,257	3,303
All species	72,008	10,148	906	13,989	5,973	6,918	4,686

(Table 51 continued on next page)

(Table 51 continued)

Species group	County					
	Polk	Price	Rusk	Sawyer	Taylor	Washburn
Softwoods						
Jack pine	570	27	--	548	2	349
Red pine	--	1	--	2	1	75
White pine	275	3	--	593	1	--
White spruce	--	4	--	3	52	34
Black spruce	--	27	--	54	12	102
Balsam fir	--	114	--	1,344	175	--
Hemlock	--	2	--	511	197	--
Tamarack	--	405	--	27	8	158
Northern white-cedar	--	426	--	10	3	--
Other softwoods	--	--	--	--	--	--
Total	845	1,009	--	3,092	451	718
Hardwoods						
White oak	237	2	--	1	--	22
Select red oak	1,040	53	259	34	--	259
Other red oak	--	2	--	1	--	--
Hickory	--	--	--	--	--	--
Basswood	149	962	222	74	464	--
Beech	--	--	--	--	--	--
Yellow birch	--	194	199	135	176	--
Hard maple	121	1,184	920	184	388	--
Soft maple	--	153	140	188	716	48
Elm	192	959	795	40	835	--
Ash	--	233	206	49	99	--
Cottonwood	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--
Bigtooth aspen	348	165	--	966	62	850
Quaking aspen	--	1,387	157	1,887	1,666	2,187
Paper birch	43	302	426	428	139	209
Black cherry	--	58	--	40	18	--
Black walnut	--	--	--	--	--	--
Butternut	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--
Total	2,130	5,654	3,324	4,027	4,563	3,575
All species	2,975	6,663	3,324	7,119	5,014	4,293

Table 52.--Average annual sawtimber removals on commercial forest land by species group and county, Northwest Unit, Wisconsin, 1967-1982

(In thousand board feet per year)[1/]

Species group	All counties	County					
		Ashland	Barron	Bayfield	Burnett	Douglas	Iron
Softwoods							
Jack pine	11,362	5	--	1,539	2,709	2,226	--
Red pine	1,885	--	--	929	--	--	524
White pine	6,469	2	--	1,416	266	--	--
White spruce	3,582	1,795	--	834	--	--	518
Black spruce	859	859	--	--	--	--	--
Balsam fir	9,806	3,594	--	2	--	1,476	207
Hemlock	6,096	1,065	--	--	--	--	4,166
Tamarack	2,001	4	638	1	--	--	--
Northern white-cedar	716	3	--	1	--	--	231
Other softwoods	--	--	--	--	--	--	--
Total	42,776	7,327	638	4,722	2,975	3,702	5,646
Hardwoods							
White oak	553	2	--	--	--	--	--
Select red oak	10,070	1	--	2,461	269	--	--
Other red oak	340	1	--	--	336	--	--
Hickory	--	--	--	--	--	--	--
Basswood	9,019	999	--	1,499	--	--	--
Beech	--	--	--	--	--	--	--
Yellow birch	4,827	2	--	281	--	--	2,609
Hard maple	13,484	4,268	--	984	--	--	271
Soft maple	2,137	526	--	540	--	--	--
Elm	16,812	4,483	--	2	--	208	381
Ash	4,071	1,553	--	408	--	--	--
Cottonwood	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--
Bigtooth aspen	21,740	--	572	9,546	3,248	--	1,687
Quaking aspen	42,820	7,779	1,846	8,464	1,178	2,627	2,914
Paper birch	13,332	3,467	--	6,215	--	733	654
Black cherry	379	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--
Butternut	--	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--
Total	139,584	23,081	2,418	30,400	5,031	3,568	8,516
All species	182,360	30,408	3,056	35,122	8,006	7,270	14,162

[1/] International 1/4-inch rule.

(Table 52 continued on next page)

(Table 52 continued)

Species group	County					
	Polk	Price	Rusk	Sawyer	Taylor	Washburn
Softwoods						
Jack pine	1,752	79	--	2,286	2	764
Red pine	--	--	--	--	--	432
White pine	1,611	1	--	3,173	--	--
White spruce	--	3	--	1	265	166
Black spruce	--	--	--	--	--	--
Balsam fir	--	256	--	3,952	319	--
Hemlock	--	--	--	--	865	--
Tamarack	--	1,185	--	3	1	169
Northern white-cedar	--	480	--	1	--	--
Other softwoods	--	--	--	--	--	--
Total	3,363	2,004	--	9,416	1,452	1,531
Hardwoods						
White oak	548	2	--	1	--	--
Select red oak	5.775	297	992	--	--	275
Other red oak	--	2	--	1	--	--
Hickory	--	--	--	--	--	--
Basswood	832	2,896	1,259	1	1,533	--
Beech	--	--	--	--	--	--
Yellow birch	--	365	1,144	1	425	--
Hard maple	704	1,003	3,797	666	1,791	--
Soft maple	--	278	--	6	787	--
Elm	988	4,496	3,118	3	3,133	--
Ash	--	566	898	12	634	--
Cottonwood	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--
Bigtooth aspen	1,919	293	--	3,470	340	665
Quaking aspen	--	2,155	303	4,947	4,404	6203
Paper birch	--	10	939	276	597	441
Black cherry	--	379	--	--	--	--
Black walnut	--	--	--	--	--	--
Butternut	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--
Total	10,766	12,742	12,450	9,384	13,644	7,584
All species	14,129	14,746	12,450	18,800	15,096	9,115

Table 53.--Current annual growing-stock and sawtimber removals on commercial forest land by species group, Northwest Unit, Wisconsin, 1967 and 1982

Species group	Growing stock		Sawtimber	
	1967	1982	1967	1982
	Thousand cubic feet		Thousand board feet[1]	
Softwoods				
Jack pine	4,978	6,263	10,702	9,315
Red pine	560	4,150	1,739	12,770
White pine	693	2,104	3,466	9,788
White spruce	129	741	832	2,656
Black spruce	145	323	169	154
Balsam fir	1,705	2,921	6,141	6,753
Hemlock	1,204	743	6,036	643
Tamarack	110	323	358	386
Northern white-cedar	40	1,018	112	1,293
Other softwoods	--	--	--	--
Total	9,564	18,586	29,555	43,758
Hardwoods				
White oak	749	1,118	1,695	3,934
Select red oak	3,160	5,451	8,276	20,781
Other red oak	1,168	535	2,363	2,243
Hickory	197	65	365	178
Basswood	3,457	1,957	8,568	7,003
Beech	--	--	--	--
Yellow birch	1,079	1,191	3,912	2,431
Hard maple	6,110	6,877	13,593	21,711
Soft maple	3,456	2,664	5,514	6,226
Elm	3,166	5,158	8,609	16,307
Ash	3,526	2,703	6,672	4,964
Cottonwood	3	--	5	--
Balsam poplar	67	47	144	51
Bigtooth aspen	8,360	9,682	23,968	30,821
Quaking aspen	27,657	34,064	44,277	83,522
Paper birch	6,661	5,134	11,178	5,413
Black walnut	1	--	9	--
Other hardwoods[2]	287	171	884	225
Total	69,104	76,817	140,032	205,810
All species	78,668	95,403	169,587	249,568

[1] International 1/4-inch rule.

[2] Includes black cherry and butternut.

Table 54.--Current annual growing-stock and sawtimber removals on commercial forest land by item and species category, Northwest Unit, Wisconsin, 1982

Item	Growing stock						Sawtimber					
	All species	Pine	Other softwoods	Aspen	Oak	Other hardwoods	All species	Pine	Other softwoods	Aspen	Oak	Other hardwoods
	Thousand cubic feet						Thousand board feet[1]					
Roundwood products												
Pulpwood[2]	57,660	8,203	2,618	33,417	873	12,549	116,604	12,150	4,260	77,298	2,033	20,863
Saw logs	17,692	3,278	1,319	4,258	2,894	5,943	90,677	17,763	5,617	21,470	15,426	30,401
Fuelwood	4,462	8	1	115	1,908	2,430	13,636	32	5	356	5,746	7,497
Posts	1,143	320	823	--	--	--	1,178	330	848	--	--	--
Veneer logs	2,213	3	--	1,751	178	281	14,341	25	--	11,319	1,141	1,856
Poles	115	115	--	--	--	--	462	462	--	--	--	--
Other	--	--	--	--	--	--	--	--	--	--	--	--
Total	83,285	11,927	4,761	39,541	5,853	21,203	236,898	30,762	10,730	110,443	24,346	60,617
Logging residue	5,164	370	256	2,462	476	1,600	7,607	693	578	2,067	1,172	3,097
Other removals	6,954	220	1,052	1,743	775	3,164	5,063	418	577	1,833	1,440	795
All removals	95,403	12,517	6,069	43,746	7,104	25,967	249,568	31,873	11,885	114,343	26,958	64,509

[1] International 1/4-inch rule.

[2] Includes particleboard and waferboard bolts.

Table 55.--Annual mortality of growing stock on commercial forest land by softwoods and hardwoods, Northwest Unit, Wisconsin, 1967 and 1982

(In thousand cubic feet)

Species	1967 [1/]	1982
Softwoods	7,000	10,298
Hardwoods	28,000	38,613
Total	35,000	48,911

[1/] Figures have been adjusted from those published after the 1968 survey to conform to 1982 volumes because of changes in survey procedures.

Table 56.--Annual mortality of growing stock on commercial forest land by species group and cause, Northwest Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	All causes	Cause						
		Insects	Disease	Fire	Animals	Weather	Suppression	Unknown and other
Softwoods								
Jack pine	1,849	37	437	37	6	132	10	1,190
Red pine	42	--	--	--	--	15	--	27
White pine	398	--	49	--	1	47	--	301
White spruce	419	1	14	--	--	9	92	303
Black spruce	251	--	21	--	--	98	--	132
Balsam fir	5,688	716	331	--	3	1,680	40	2,918
Hemlock	469	1	19	--	9	47	4	389
Tamarack	930	22	169	--	--	59	--	680
Northern white-cedar	252	--	15	--	1	120	--	116
Other softwoods	--	--	--	--	--	--	--	--
Total	10,298	777	1,055	37	20	2,207	146	6,056
Hardwoods								
White oak	257	--	30	--	--	28	21	178
Select red oak	1,619	1	169	14	--	578	4	853
Other red oak	2,101	--	209	15	--	139	--	1,738
Select hickory	--	--	--	--	--	--	--	--
Other hickory	27	--	--	--	--	--	--	27
Basswood	1,434	10	80	--	12	85	48	1,199
Beech	--	--	--	--	--	--	--	--
Yellow birch	947	--	217	--	--	37	1	692
Hard maple	1,658	--	349	--	53	165	1	1,090
Soft maple	2,365	--	328	--	1	333	5	1,698
Elm	2,836	85	1,538	--	8	52	2	1,151
Black ash	974	--	20	--	2	93	1	858
White & green ash	116	--	6	--	--	11	--	99
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--
Willow	--	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	146	--	23	--	--	--	--	123
Bigtooth aspen	3,595	19	714	55	11	433	1	2,362
Quaking aspen	18,962	15	3,928	--	181	2,552	100	12,186
Paper birch	1,353	--	143	--	--	72	1	1,137
Black cherry	194	--	61	--	--	14	14	105
Black walnut	--	--	--	--	--	--	--	--
Butternut	29	--	--	--	--	2	--	27
Other hardwoods	--	--	--	--	--	--	--	--
Total	38,613	130	7,815	84	268	4,594	199	25,523
All species	48,911	907	8,870	121	288	6,801	345	31,579

Table 57.--Annual mortality of sawtimber on commercial forest land by species group and cause, Northwest Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Species group	All causes	Cause						
		Insects	Disease	Fire	Animals	Weather	Suppression	Unknown and other
Softwoods								
Jack pine	1,800	57	144	--	20	569	--	1,010
Red pine	157	--	--	--	--	86	--	71
White pine	1,590	3	238	--	4	300	--	1,045
White spruce	794	9	44	--	--	7	--	734
Black spruce	95	--	4	--	--	88	--	3
Balsam fir	8,939	74	1,161	--	6	2,646	3	5,049
Hemlock	1,935	8	89	--	33	210	14	1,581
Tamarack	793	--	91	--	--	6	--	696
Northern white-cedar	802	--	110	--	5	238	--	449
Other softwoods	--	--	--	--	--	--	--	--
Total	16,905	151	1,881	--	68	4,150	17	10,638
Hardwoods								
White oak	480	--	150	--	3	38	3	286
Select red oak	2,404	--	363	--	--	554	--	1,487
Other red oak	1,244	--	175	65	--	136	--	868
Select hickory	--	--	--	--	--	--	--	--
Other hickory	13	--	7	--	--	--	--	6
Basswood	2,526	24	223	--	38	261	--	1,980
Beech	--	--	--	--	--	--	--	--
Yellow birch	2,685	--	635	--	--	127	--	1,923
Hard maple	2,218	--	597	--	6	427	--	1,188
Soft maple	2,038	--	367	--	--	359	--	1,312
Elm	7,310	139	4,194	--	25	202	--	2,750
Black ash	974	--	19	--	--	127	--	828
White & green ash	236	--	17	--	--	5	--	214
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--
Willow	--	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	262	--	52	--	--	--	--	210
Bigtooth aspen	7,157	96	1,381	--	42	1,887	--	3,751
Quaking aspen	24,658	--	6,241	--	140	4,406	--	13,871
Paper birch	664	--	120	--	--	63	--	481
Black cherry	23	--	--	--	--	--	--	23
Black walnut	--	--	--	--	--	--	--	--
Butternut	10	--	4	--	--	--	--	6
Other hardwoods	--	--	--	--	--	--	--	--
Total	54,902	259	14,545	65	254	8,592	3	31,184
All species	71,807	410	16,426	65	322	12,742	20	41,822

[1/] International 1/4-inch rule.

Table 58.--Annual mortality of growing stock and sawtimber on commercial forest land by county and softwoods and hardwoods, Northwest Unit, Wisconsin, 1982

County	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	Thousand cubic feet			Thousand board feet[1]		
Ashland	6,278	2,981	3,297	8,704	2,862	5,842
Barron	1,524	5	1,519	2,508	11	2,497
Bayfield	7,659	1,683	5,976	10,857	3,142	7,715
Burnett	3,277	428	2,849	4,392	712	3,680
Douglas	5,132	1,210	3,922	7,090	2,120	4,970
Iron	3,283	710	2,573	5,829	1,819	4,010
Polk	2,283	56	2,227	2,874	36	2,838
Price	5,057	1,302	3,755	8,933	3,279	5,654
Rusk	3,368	178	3,190	4,522	374	4,148
Sawyer	4,941	731	4,210	7,984	1,349	6,635
Taylor	2,874	527	2,347	3,966	638	3,328
Washburn	3,235	487	2,748	4,148	563	3,585
All counties	48,911	10,298	38,613	71,807	16,905	54,902

[1] International 1/4-inch rule.

Table 59.--Annual mortality of growing stock and sawtimber on commercial forest land by ownership class and softwoods and hardwoods, Northwest Unit, Wisconsin, 1982

Ownership class	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	Thousand cubic feet			Thousand board feet[1]		
National Forest	8,289	4,650	3,639	11,949	5,241	6,708
Miscellaneous federal	45	--	45	85	--	85
State	1,509	241	1,268	2,641	498	2,143
County and municipal	10,439	1,774	8,665	15,023	4,093	10,930
Indian	1,235	173	1,062	2,400	647	1,753
Forest industry	3,777	800	2,977	5,846	1,731	4,115
Farmer	4,630	381	4,249	7,034	611	6,423
Misc. private-corp.	2,268	205	2,063	3,427	350	3,077
Misc. private-indiv.	16,719	2,074	14,645	23,402	3,734	19,668
All owners	48,911	10,298	38,613	71,807	16,905	54,902

[1] International 1/4-inch rule.

Table 60.--Output of timber products by product, softwoods and hardwoods, and source of material, Northwest Unit, Wisconsin, 1981

Product	Standard units	Total		Roundwood products				Plant byproducts	
				Growing stock		Non-growing stock			
		No. of units	Thousand cubic feet	No. of units	Thousand cubic feet	No. of units	Thousand cubic feet	No. of units	Thousand cubic feet
Pulpwood[1]									
Softwoods	Standard[2] cords	189,292	14,941	137,109	10,821	31,259	2,467	20,924	1,653
Hardwoods		731,595	57,793	592,931	46,839	108,753	8,591	29,911	2,363
Total		920,887	72,734	730,040	57,660	140,012	11,058	50,835	4,016
Saw logs									
Softwoods	Thousand[3] board feet	25,790	4,773	24,839	4,597	951	176	--	--
Hardwoods		81,115	14,203	74,787	13,095	6,328	1,108	--	--
Total		106,905	18,976	99,626	17,692	7,279	1,284	--	--
Veneer logs									
Softwoods	Thousand[3] board feet	27	3	27	3	--	--	--	--
Hardwoods		15,128	2,445	13,674	2,210	1,454	235	--	--
Total		15,155	2,448	13,701	2,213	1,454	235	--	--
Fuelwood									
Softwoods	Standard[2] cords	14,166	986	130	9	5,629	389	8,407	588
Hardwoods		307,877	21,518	63,729	4,453	200,404	14,003	43,744	3,062
Total		322,043	22,504	63,859	4,462	206,033	14,392	52,151	3,650
Posts									
Softwoods	Thousand pieces	1,238	1,272	1,112	1,143	126	129	--	--
Hardwoods		--	--	--	--	--	--	--	--
Total		1,238	1,272	1,112	1,143	126	129	--	--
Poles									
Softwoods	Pieces	13,617	115	13,617	115	--	--	--	--
Hardwoods		--	--	--	--	--	--	--	--
Total		13,617	115	13,617	115	--	--	--	--
Other[4]									
Softwoods	Thousand cubic feet	705	705	--	--	--	--	705	705
Hardwoods		1,058	1,058	--	--	--	--	1,058	1,058
Total		1,763	1,763	--	--	--	--	1,763	1,763
All products									
Softwoods	Thousand cubic feet	--	22,795	--	16,688	--	3,161	--	2,946
Hardwoods		--	97,017	--	66,597	--	23,937	--	6,483
Total		--	119,812	--	83,285	--	27,098	--	9,429

[1] Includes roundwood and plant byproducts used for particleboard and waferboard.

[2] 128 cubic feet of stacked wood including bark and air.

[3] International 1/4-inch rule.

[4] Other (industrial production) includes cabin logs, charcoal wood, shingle bolts, pilings, etc.

Table 61.--Output of roundwood products by product, softwoods and hardwoods, and source of material, Northwest Unit, Wisconsin, 1981

(In thousand cubic feet)

Product and species group	All sources	Growing-stock trees			Rough and rotten trees	Salvable dead trees	Other sources
		Total	Sawtimber	Poletimber			
Industrial products							
Saw logs							
Softwoods	4,773	4,597	4,246	351	--	13	163
Hardwoods	14,203	13,095	11,782	1,313	209	678	221
Subtotal	18,976	17,692	16,028	1,664	209	691	384
Veneer logs and bolts							
Softwoods	3	3	3	--	--	--	--
Hardwoods	2,445	2,210	2,210	--	231	--	4
Subtotal	2,448	2,213	2,213	--	231	--	4
Pulpwood[1/]							
Softwoods	13,288	10,821	4,547	6,274	176	1,014	1,277
Hardwoods	55,430	46,839	26,634	20,205	3,482	2,303	2,806
Subtotal	68,718	57,660	31,181	26,479	3,658	3,317	4,083
Cooperage							
Softwoods	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--
Subtotal	--	--	--	--	--	--	--
Piling							
Softwoods	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--
Subtotal	--	--	--	--	--	--	--
Poles							
Softwoods	115	115	96	19	--	--	--
Hardwoods	--	--	--	--	--	--	--
Subtotal	115	115	96	19	--	--	--
Mine timbers (Round)							
Softwoods	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--
Subtotal	--	--	--	--	--	--	--
Posts (Round and split)							
Softwoods	1,272	1,143	305	838	14	--	115
Hardwoods	--	--	--	--	--	--	--
Subtotal	1,272	1,143	305	838	14	--	115
Other							
Softwoods	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--
Subtotal	--	--	--	--	--	--	--
All industrial products							
Softwoods	19,451	16,679	9,197	7,482	190	1,027	1,555
Hardwoods	72,078	62,144	40,626	21,518	3,922	2,981	3,031
Total	91,529	78,823	49,823	29,000	4,112	4,008	4,586
Fuelwood							
Softwoods	398	9	6	3	1	269	119
Hardwoods	18,456	4,453	2,680	1,773	896	6,554	6,553
Total	18,854	4,462	2,686	1,776	897	6,823	6,672
All products							
Softwoods	19,849	16,688	9,203	7,485	191	1,296	1,674
Hardwoods	90,534	66,597	43,306	23,291	4,818	9,535	9,584
Total	110,383	83,285	52,509	30,776	5,009	10,831	11,258

[1/] Includes particleboard and waferboard bolts.

Table 62.--Timber products from roundwood by species group and product, Northwest Unit, Wisconsin, 1981

Species group	All products	Pulpwood[1]		Saw logs		Veneer logs	
	Thousand cubic feet	Cords	Thousand cubic feet	Thousand board feet[2]	Thousand cubic feet	Thousand board feet[2]	Thousand cubic feet
Softwoods							
Jack pine	8,117	91,961	7,258	3,616	759	--	--
Red pine	4,440	35,791	2,830	6,600	1,120	--	--
White pine	1,864	3,635	288	9,163	1,557	27	3
White spruce	731	4,236	334	1,764	370	--	--
Black spruce	193	1,122	88	467	98	--	--
Balsam fir	2,956	25,286	1,987	3,818	801	--	--
Hemlock	354	3,698	295	157	27	--	--
Tamarack	222	2,639	208	71	14	--	--
Northern white-cedar	972	--	--	134	27	--	--
Other softwoods	--	--	--	--	--	--	--
Total	19,849	168,368	13,288	25,790	4,773	27	3
Hardwoods							
White oak	1,631	2,242	173	2,998	521	12	2
Select red oak	7,766	10,907	856	13,044	2,286	1,086	177
Other red oak	840	1,180	93	1,412	247	117	19
Hickory	159	--	--	40	5	--	--
Basswood	2,317	6,073	478	7,222	1,286	451	71
Beech	92	3	3/	520	92	--	--
Yellow birch	1,700	15,601	1,230	798	142	310	49
Hard maple	9,211	51,717	4,092	8,525	1,422	437	69
Soft maple	3,662	25,454	2,012	2,483	442	66	8
Elm	9,856	40,265	3,183	13,130	2,342	424	66
Ash	2,713	20,148	1,592	3,060	544	137	20
Cottonwood	1	--	--	14	1	--	--
Balsam poplar	139	624	49	502	90	--	--
Bigtooth aspen	9,950	105,699	8,350	5,559	971	2,693	438
Quaking aspen	34,225	363,561	28,722	19,120	3,338	9,261	1,507
Paper birch	6,156	57,361	4,535	2,529	450	134	19
Black walnut	3	--	--	25	3	--	--
Other hardwoods[4]	113	849	65	134	21	--	--
Total	90,534	701,684	55,430	81,115	14,203	15,128	2,445
All species	110,383	870,052	68,718	106,905	18,976	15,155	2,448

(Table 62 continued on next page)

1/ Includes particleboard and waferboard bolts.

2/ International 1/4-inch rule.

3/ Less than 500 cubic feet.

4/ Includes butternut and black cherry.

(Table 62 continued)

Species group	Fuelwood		Posts		Poles		Other products
	Cords	Thousand cubic feet	Thousand pieces	Thousand cubic feet	Pieces	Thousand cubic feet	Thousand cubic feet
Softwoods							
Jack pine	1,432	100	--	--	--	--	--
Red pine	145	9	356	366	13,617	115	--
White pine	256	16	--	--	--	--	--
White spruce	390	27	--	--	--	--	--
Black spruce	103	7	--	--	--	--	--
Balsam fir	2,400	168	--	--	--	--	--
Hemlock	462	32	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--
Northern white-cedar	571	39	882	906	--	--	--
Other softwoods	--	--	--	--	--	--	--
Total	5,759	398	1,238	1,272	13,617	115	--
Hardwoods							
White oak	13,449	935	--	--	--	--	--
Select red oak	63,496	4,447	--	--	--	--	--
Other red oak	6,873	481	--	--	--	--	--
Hickory	2,218	154	--	--	--	--	--
Basswood	6,914	482	--	--	--	--	--
Beech	--	--	--	--	--	--	--
Yellow birch	4,047	279	--	--	--	--	--
Hard maple	51,896	3,628	--	--	--	--	--
Soft maple	17,225	1,200	--	--	--	--	--
Elm	60,945	4,265	--	--	--	--	--
Ash	7,985	557	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--
Balsam poplar	8	3/	--	--	--	--	--
Bigtooth aspen	2,739	191	--	--	--	--	--
Quaking aspen	9,423	658	--	--	--	--	--
Paper birch	16,501	1,152	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--
Other hardwoods 4/	414	27	--	--	--	--	--
Total	264,133	18,456	--	--	--	--	--
All species	269,892	18,854	1,238	1,272	13,617	115	--

3/ Less than 500 cubic feet.

4/ Includes butternut and black cherry.

Table 63.--Volume of primary plant residue by use and type of residue, Northwest Unit, Wisconsin, 1981

(In thousand cubic feet)

Use	Wood residue							
	Total		Coarse[1/]		Fine[2/]		Bark[3/]	
	Softwoods	Hardwoods	Softwoods	Hardwoods	Softwoods	Hardwoods	Softwoods	Hardwoods
Fiber products[4/]	1,074.3	1,728.0	1,074.2	1,532.8	0.1	195.2	2.6	4.5
Charcoal	2.0	307.3	1.9	296.8	0.1	10.5	1.3	191.7
Industrial fuel	222.9	2,384.1	67.8	1,076.0	155.1	1,308.1	641.6	1,940.6
Domestic fuel	365.6	678.0	365.0	458.1	0.6	219.9	162.8	179.0
Miscellaneous[5/]	703.0	750.3	3.8	4.5	699.2	745.8	6.6	25.9
Not used[6/]	102.1	169.9	44.2	120.7	57.9	49.2	91.5	126.6
Total	2,469.9	6,017.6	1,556.9	3,488.9	913.0	2,528.7	906.4	2,468.3

[1/] Suitable for chipping such as slabs, edgings, veneer cores, etc.

[2/] Not suitable for chipping such as sawdust, veneer clippings, etc.

[3/] Does not include bark disposal at pulpmills.

[4/] For manufacture of pulp, hardboard, or roofing felt.

[5/] Livestock bedding, mulch, small dimension, and specialty items.

[6/] Includes residue burned as waste.

Table 64.--All live tree biomass on commercial forest land by species group and forest type, Northwest Unit, Wisconsin, 1983

(In green tons)

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	13,757,750	10,907,368	196,250	71,175	--	--	--	--
Red pine	7,670,054	490,768	5,153,156	394,315	103,065	5,115	33,632	--
White pine	6,111,859	82,496	926,735	1,565,158	261,057	67,660	68,899	28,612
White spruce	4,320,786	--	33,882	76,756	452,990	2,127,550	19,997	90,612
Black spruce	3,532,999	5,867	--	44,514	153,589	13,790	2,139,698	140,430
Balsam fir	17,726,420	3,311	127,039	90,838	6,309,150	173,435	197,068	1,264,990
Hemlock	3,893,860	--	--	--	111,140	11,065	76,428	227,799
Tamarack	3,693,670	--	--	29,737	149,790	--	651,469	199,571
Northern white-cedar	5,114,620	--	11,680	--	825,172	67,493	145,203	2,706,169
Other softwoods	13,187	--	--	10,264	--	--	--	--
Total	65,835,205	11,489,810	6,448,742	2,282,757	8,365,953	2,466,108	3,332,394	4,658,183
Hardwoods								
White oak	6,403,223	82,689	21,736	14,778	4,679	--	--	--
Select red oak	26,674,786	223,500	327,167	41,875	21,486	--	28,849	--
Other red oak	4,439,817	433,167	62,403	59,324	--	--	4,434	--
Select hickory	--	--	--	--	--	--	--	--
Other hickory	817,493	--	--	--	--	--	--	--
Basswood	16,269,470	--	3,921	17,397	6,007	--	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	8,478,941	--	--	--	353,708	10,828	35,682	579,383
Hard maple	45,549,439	--	47,359	--	176,697	26,784	45,710	37,978
Soft maple	37,001,328	11,046	455,637	111,598	720,484	30,265	77,102	268,484
Elm	9,314,813	--	5,272	12,951	79,637	--	--	--
Black ash	14,093,907	--	579	--	590,499	7,989	--	490,502
White & green ash	4,546,973	--	5,370	--	6,558	24,474	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	822	--	--	--	--	--	--	--
Willow	35,790	--	--	--	6,290	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	472,205	--	--	--	4,267	--	--	--
Bigtooth aspen	13,047,344	119,190	128,486	58,297	19,033	7,554	15,390	9,077
Quaking aspen	47,334,734	429,192	421,681	407,761	1,066,826	66,955	99,612	89,643
Paper birch	25,137,267	43,256	250,646	85,090	638,753	23,295	74,777	171,126
Black cherry	2,177,195	1,036	--	--	71,810	--	--	3,761
Black walnut	8,023	--	--	--	--	--	--	--
Butternut	438,907	--	--	--	--	--	--	--
Other hardwoods	12,137	--	--	--	--	--	--	--
Noncommercial species	3,592,939	--	5,350	12,640	49,692	--	--	--
Total	265,847,553	1,343,076	1,735,607	821,711	3,816,426	198,144	381,556	1,649,954
All species	331,682,758	12,832,886	8,184,349	3,104,468	12,182,379	2,664,252	3,713,950	6,308,137

(Table 64 continued on next page)

(Table 64 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotics	Nonstocked
Softwoods								
Jack pine	24,312	1,537,322	15,701	25,964	811,265	77,671	--	90,722
Red pine	11,586	233,641	9,580	225,126	911,079	98,991	--	--
White pine	144,338	283,359	241,712	1,210,412	1,048,605	179,783	--	3,033
White spruce	33,755	--	117,183	450,431	707,112	204,351	--	6,167
Black spruce	614,282	--	83,362	86,076	187,917	63,474	--	--
Balsam fir	305,250	32,712	1,731,835	3,135,980	3,281,659	1,072,157	--	996
Hemlock	3,783	27,543	301,544	2,923,466	109,099	83,126	--	18,867
Tamarack	1,994,342	5,700	200,714	55,953	303,072	70,035	--	33,287
Northern white-cedar	32,054	--	627,054	538,612	129,449	31,734	--	--
Other softwoods	--	--	--	2,923	--	--	--	--
Total	3,163,702	2,120,277	3,328,685	8,654,943	7,489,257	1,881,322	--	153,072
Hardwoods								
White oak	--	3,034,801	333,338	1,191,979	1,458,360	250,112	--	10,751
Select red oak	--	12,793,195	395,299	7,102,542	4,399,555	1,341,318	--	--
Other red oak	--	2,500,322	138,643	300,587	748,723	131,577	--	60,637
Select hickory	--	--	--	--	--	--	--	--
Other hickory	--	161,612	22,385	592,817	40,679	--	--	--
Basswood	--	554,464	602,629	14,088,933	811,597	184,522	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	11,913	18,715	956,550	5,856,417	504,131	129,941	--	21,673
Hard maple	13,271	1,278,329	1,030,483	39,916,777	2,262,995	580,528	--	132,528
Soft maple	141,484	1,921,132	4,709,938	18,834,273	7,595,540	2,103,064	--	21,281
Elm	7,670	338,703	2,456,143	5,449,943	792,063	140,618	--	31,813
Black ash	20,521	156,355	7,947,902	3,526,865	1,009,196	312,119	--	31,380
White & green ash	--	271,123	332,605	3,512,041	234,692	160,110	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	822	--	--	--	--	--
Willow	--	--	8,198	11,050	10,252	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	4,318	67,491	41,921	341,874	12,334	--	--
Bigtooth aspen	98,971	1,587,001	83,218	1,362,351	8,955,181	596,224	--	7,371
Quaking aspen	178,327	926,236	1,538,576	6,410,954	33,587,192	1,929,075	--	182,704
Paper birch	248,721	1,545,191	702,677	4,589,466	7,733,127	8,985,150	--	45,992
Black cherry	11,837	146,614	79,160	1,097,958	620,826	103,627	--	40,566
Black walnut	--	--	--	8,023	--	--	--	--
Butternut	--	78,933	6,923	344,325	8,726	--	--	--
Other hardwoods	--	6,271	5,866	--	--	--	--	--
Noncommercial species	--	350,502	180,823	1,912,457	828,417	247,686	--	5,372
Total	732,715	27,673,817	21,599,669	116,151,679	71,943,126	17,208,005	--	592,068
All species	3,896,417	29,794,094	24,928,354	124,806,622	79,432,383	19,089,327	--	745,140

Table 65.--All live tree biomass by species group and tree biomass component, Northwest Unit, Wisconsin, 1983

(In green tons)

Species group	All components	Biomass component: All live 1- to 5-inch trees	Growing stock: Boles	Growing stock: Tops and limbs	Cull: Boles	Cull: Tops and limbs
Softwoods						
Jack pine	13,757,750	2,176,670	7,609,521	3,238,214	526,304	207,041
Red pine	7,670,054	693,034	4,814,788	2,074,267	61,522	26,443
White pine	6,111,859	307,812	3,721,056	1,606,336	332,663	143,992
White spruce	4,320,786	434,498	2,686,586	1,119,050	62,363	18,289
Black spruce	3,532,999	2,204,380	848,692	353,822	107,764	18,341
Balsam fir	17,726,420	5,120,100	8,557,069	3,537,137	396,637	115,477
Hemlock	3,893,860	69,132	2,207,338	933,004	486,729	197,657
Tamarack	3,693,670	1,103,072	1,694,892	711,979	134,524	49,203
Northern white-cedar	5,114,620	626,940	2,366,040	965,276	840,452	315,912
Other softwoods	13,187	--	9,279	3,908	--	--
Total	65,835,205	12,735,638	34,515,261	14,542,993	2,948,958	1,092,355
Hardwoods						
White oak	6,403,223	574,364	3,050,691	1,264,699	1,102,011	411,458
Select red oak	26,674,786	1,283,896	15,676,248	6,642,616	2,175,517	896,509
Other red oak	4,439,817	151,914	1,709,730	714,336	1,358,236	505,601
Select hickory	--	--	--	--	--	--
Other hickory	817,493	141,516	400,189	170,105	80,743	24,940
Basswood	16,269,470	799,378	9,784,105	4,145,454	1,100,584	439,949
Beech	--	--	--	--	--	--
Yellow birch	8,478,941	739,138	3,269,882	1,367,331	2,250,602	851,988
Hard maple	45,549,439	7,526,665	20,104,517	8,515,846	6,804,001	2,598,410
Soft maple	37,001,328	9,409,836	14,599,455	6,202,839	5,004,810	1,784,388
Elm	9,314,813	679,829	5,089,631	2,117,019	1,031,080	397,254
Black ash	14,093,907	2,351,888	7,407,553	3,097,957	948,355	288,154
White & green ash	4,546,973	253,755	2,669,745	1,135,504	352,189	135,780
Sycamore	--	--	--	--	--	--
Cottonwood	822	822	--	--	--	--
Willow	35,790	--	5,789	2,409	21,234	6,358
Hackberry	--	--	--	--	--	--
Balsam poplar	472,205	101,923	230,089	98,935	28,816	12,442
Bigtooth aspen	13,047,344	915,895	7,694,142	3,341,992	783,444	311,871
Quaking aspen	47,334,734	6,074,439	24,590,710	10,576,858	4,338,066	1,754,661
Paper birch	25,137,267	3,161,542	13,758,213	5,851,178	1,739,463	626,871
Black cherry	2,177,195	321,896	694,705	296,074	617,720	246,800
Black walnut	8,023	--	--	--	5,616	2,407
Butternut	438,907	29,573	169,276	71,989	117,908	50,161
Other hardwoods	12,137	--	4,141	1,725	4,433	1,838
Noncommercial species	3,592,939	--	--	--	3,351,062	241,877
Total	265,847,553	34,518,269	130,908,811	55,614,866	33,215,890	11,589,717
All species	331,682,758	47,253,907	165,424,072	70,157,859	36,164,848	12,682,072

Table 66.--Sampling errors[1/] for estimates smaller than the Unit totals of volume, net growth, removals, and area of commercial forest land, Northwest Unit, Wisconsin, 1983

Sampling error	Commercial forest land	Growing stock			Sawtimber		
		Inventory	Growth	Removals	Inventory	Growth	Removals
Percent	Thousand acres	- - - -Thousand cubic feet- - - -			- - - -Thousand board feet[2/] - - -		
1	677.8	11,945,209	828,191	19,045,163	67,150,869	5,948,281	76,363,039
2	169.4	2,986,302	207,048	4,761,291	16,787,717	1,487,070	19,090,760
3	75.3	1,327,245	92,021	2,116,129	7,461,208	660,920	8,484,782
4	42.4	746,576	51,762	1,190,323	4,196,929	371,768	4,772,690
5	27.1	477,808	33,128	761,807	2,686,035	237,931	3,054,522
10	6.8	119,452	8,282	190,452	671,509	59,483	763,630
15	3.0	53,090	3,681	84,645	298,448	26,437	339,391
20	1.7	29,863	2,070	47,613	167,877	14,871	190,908
25	1.1	19,112	1,325	30,472	107,441	9,517	122,181
50	0.3	4,778	331	7,618	26,860	2,379	30,545
100	0.1	1,195	83	1,905	6,715	595	7,636

[1/] At the 68-percent probability level.

[2/] International 1/4-inch rule.

Table 67.--Sampling errors for county totals of growing-stock volume, net growth, removals, and area of commercial forest land, Northwest Unit, Wisconsin, 1983

(Percent of estimate)

County	Commercial forest land	Growing stock		
		Inventory	Growth	Removals
Ashland	1.16	4.29	6.07	41.01
Barron	2.07	9.10	14.75	85.50
Bayfield	0.96	3.74	5.24	38.07
Burnett	1.46	6.55	9.53	69.60
Douglas	1.04	4.68	6.24	78.36
Iron	1.34	5.20	7.80	58.73
Polk	1.75	7.53	11.32	60.03
Price	1.11	5.01	6.88	56.62
Rusk	1.37	5.71	7.94	63.96
Sawyer	1.06	4.28	5.98	47.66
Taylor	1.38	5.78	7.17	58.11
Washburn	1.44	6.05	8.62	74.74
All counties	0.36	1.50	2.10	16.29

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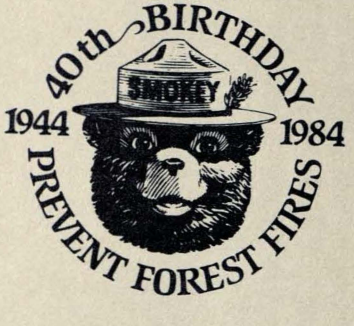
Smith, W. Brad.
Timber resource of Wisconsin's Northwest Survey Unit, 1983. Resour. Bull. NC-73. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station; 1984. 97 p.

The fourth inventory of the timber resource of the Northwest Wisconsin Survey Unit shows a 1.8 percent decline in commercial forest area and a 36 percent gain in growing-stock volume between 1968 and 1983. Presented are highlights and statistics on area, volume, growth, mortality, removals, utilization, and biomass.

KEY WORDS: Statistics, area, volume, growth, mortality, and removals.


40th BIRTHDAY
1944
1984
SMOKEY
PREVENT FOREST FIRES